

# **Historic, Archive Document**

Do not assume content reflects current  
scientific knowledge, policies, or practices.





United States  
Department of  
Agriculture

Economic  
Research  
Service

TFS-261  
March 1992

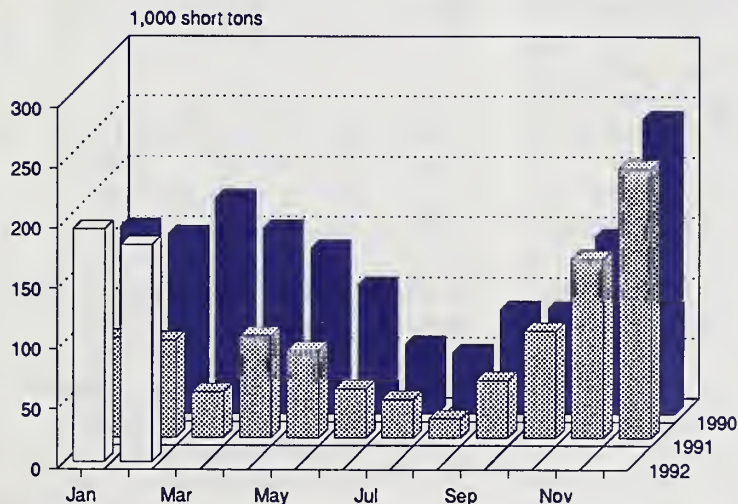
# Fruit and Tree Nuts

## Situation and Outlook Report

FILE 17

USDA  
NAT'L AGRIC LIBRARY  
1999 SEP 17 P 3:20  
CURRENT SERIALS  
ACQ/SERIALS

### Domestic Orange Shipments



## Contents

**Fruit and Tree Nuts Situation and Outlook.** Commodity Economics Division, Economic Research Service, U.S. Department of Agriculture, March 1992, TFS-261.

---

Approved by the World Agricultural Outlook Board. Summary released Wednesday, March 18, 1992. The summary of the next Fruit and Tree Nuts Situation and Outlook is scheduled for release in August 1992. Summaries and text of reports may be accessed electronically; for details, call (202) 720-5505.

The *Fruit and Tree Nuts Situation and Outlook* is published three times a year and supplemented by a yearbook. Subscriptions are available from ERS-NASS, P.O. Box 1608, Rockville, MD 20849-1608; or call, toll free, 1-800-999-6779 (weekdays, 8:30-5:00 ET). Rates: 1 year \$12, 2 years \$23, 3 years \$33. Add 25 percent for subscriptions mailed outside the United States. Make checks payable to ERS-NASS. Single copies are available for \$8 each.

Time to renew? Your subscription to the *Fruit and Tree Nuts Situation and Outlook* expires in the month and year shown on the top line of your address label. If your subscription is about to expire, renew today. Call 1-800-999-6779.

---

<b>Summary</b> .....	3
<b>Fruit Price Outlook</b>	
Wide Fluctuations in Monthly Fruit Price Indexes .....	4
<b>Citrus Fruit Outlook</b>	
U.S. Citrus Production Forecast Up 7 Percent in 1991/92 .....	6
Fresh-Market Orange Production Rebounds from 1990/91 .....	8
Fewer Oranges for Processing .....	12
More Tangerines and Temples Produced in 1991/92 .....	15
Florida Grapefruit Crop Forecast Down 7 Percent from 1990/91 ....	18
Lemon Crop Down 5 Percent, but 9 Percent More Limes .....	22
<b>Noncitrus Fruit Outlook</b>	
Noncitrus Production Down Slightly in 1991 .....	26
Strong Apple Prices Continue in 1992 .....	28
1991 Pear Production Down From Record High in 1990 .....	30
Strawberry Production Value Up 14 Percent in 1991 .....	32
Avocado Production Up in 1991/92 .....	34
Poor Weather Slows Chilean Fruit Production Growth, but U.S. Imports Increase .....	35
<b>Tree Nut Outlook</b>	
Tree Nut Production Falls in 1991, Prices Higher .....	36
<b>Special Articles:</b>	
Net Cash Income and Selected Characteristics of U.S. Farms Producing Fruits, Tree Nuts, and Berries .....	49
USDA's Method of Estimating Fruit and Tree Nut Production .....	58
<b>List of Tables</b> .....	64
<b>Situation Coordinator</b>	
Diane Bertelsen	
<b>Principal Contributors</b>	
Boyd M. Buxton (202) 219-0884	
Diane R. Bertelsen (202) 219-0884	
Doyle C. Johnson (202) 219-0884	
Dennis A. Shields (202) 219-0884	
<b>Data and Graphics Information Coordinator</b>	
Wynnice P. Napper (202) 219-0884	
<b>Word Processing and Design &amp; Layout</b>	
Kyra A. Toland (202) 219-0882	

## Summary

Grower price indexes for all fruit in early 1992 remained near the high levels of a year ago. The consumer price index (CPI) for fresh apples averaged 18 percent higher in 1991 than in 1990, and the fresh-orange CPI averaged 55 percent higher. Prices declined at the end of 1991 but remained above a year earlier, up 12 percent for fresh apples and 22 percent for fresh oranges.

USDA's March forecast of 1991/92 citrus production was 4 percent higher than the first forecast in October 1991. If the March forecast is realized, this season's citrus crop would be 7 percent larger than in 1990/91 and 12 percent more than in 1989/1990. In the two seasons prior to 1991/92, citrus crops were damaged by freezing weather, Florida and Texas in December 1989 and California in December 1990.

### **U.S. 1991/92 Orange Production Up 11 Percent**

The March forecast of 1991/92 U.S. orange production was 11 percent more than the 1990/91 production estimate. In Florida orange production was expected to be down 8 percent from 1990/91. Although the Florida crop is lower, total U.S. orange juice production in 1991/92 is expected to be approximately the same as in the previous season.

Despite 5 percent higher juice yields and a smaller orange crop this season, grower prices (on-tree-equivalent returns) for Florida processing oranges have been below last season. However the February 1992 price, while still below February 1991, was up 12 percent from the prior month.

California is making a remarkable recovery from the devastating freeze that brought the State's 1990/91 orange production down 64 percent from the prior year. In the 1991/92 season, California is expected to produce 146 percent more oranges

than last season. The March forecast of the California orange crop was 19 percent higher than the first forecast in October 1991.

The U.S. price (on-tree-equivalent returns to growers) for fresh oranges was under \$10 a box in February 1992, for the first time since October 1990. Grower prices for fresh-market oranges were down 66 percent in California, 59 percent in Arizona, and 13 percent in Florida from February 1991.

### **Florida Grapefruit Crop Down 7 Percent**

With the Florida grapefruit harvest 77 percent complete, the March forecast of the 1991/92 crop was 7 percent less than 1990/91 production. If California production recovers to its 1989/90 level, U.S. grapefruit production will be about 4 percent less this season than in 1990/91.

Despite the smaller crop and larger, good-quality fruit, fresh grapefruit prices have been below last season. In contrast, grower prices for Florida processing grapefruit have been higher this season, as processors reported low carryover stocks of frozen concentrate grapefruit juice.

### **Noncitrus Fruit Crop Value Higher in 1991**

Utilized production of major noncitrus fruit crops, including strawberries, was 15.5 million tons in 1991, down 1 percent from 1990. Larger crops of apples, sweet cherries, cranberries, peaches, and prunes were produced, while production of other noncitrus fruit, including apricots, tart cherries, figs, grapes, nectarines, and pears, declined.

The 1991 value of utilized production of major noncitrus crops was \$5.26 billion, up 3 percent from 1990. Increases in the crop values of apples (up 20 percent), peaches (up 6 per -

cent), and pears (up 3 percent) more than offset crop-value declines in other noncitrus fruits.

Abnormal weather conditions in Chile during its deciduous fruit growing season negatively affected 1991/92 production and export availability. However, U.S. stone-fruit and table-grape imports from Chile were higher than last year, and prices were considerably lower than a year earlier.

The preliminary value of production for domestic tree nuts (excluding walnuts, for which data will be available on July 7, 1992) was \$940 million in 1991, down 8 percent from a year earlier and 21 percent above 1989. Production values increased for hazelnuts and pecans but decreased for almonds, pistachios, and macadamias.

### **Special Articles Describe Specialized Farms and Forecast Errors**

The first special article discusses special data tabulations of the 1987 Census of Agriculture that indicate the net cash income, specialization, and structure of U.S. fruit, tree nut, and berry farms vary widely by type of farm, region, and size.

The second special article reviews USDA's methods of forecasting and estimating fruit and tree nut production. The methods are based on nonprobability, probability, and objective yield surveys. The reliability of the forecasts, as measured by root mean square errors (RMSE's), varied by amount of aggregation, commodity, and timing. The RMSE for the July U.S. apple forecast was 5.4 percent, indicating a 2-out-of-3 chance that a July forecast will be within 5.4 percent of USDA's final estimate. The October Florida orange and grapefruit forecasts had RMSE's of 5.9 and 6.6 percent, respectively.

## Wide Fluctuations in Monthly Fruit Price Indexes

*Grower prices for all fruit moved down from last summer's record highs as the 1991/92 fresh orange season got underway, yet prices were still ahead of the last two seasons.*

### Orange Prices Recede From Record Highs of 1991

In January 1992, the index of grower prices for all fruit was 207, 4 percent higher than in January 1991. The index had risen sharply immediately following the December 1990 freeze that devastated the California citrus crop. The January 1991 grower price index for all fruit was 200, the low point of the year, but 17 percent above the year earlier.

The grower price index for all fruit was above year-earlier levels throughout 1991. From June through September 1991, the index was about twice as high as it had been in the same period of the previous 3 years. For fresh-market fruit, the index rose from 210 in January 1991 to 422 in June, reaching a high of 438 in September. The price jump reflected sharply higher U.S.-average orange prices because the drastically reduced California crop left a very small volume of higher-priced fresh oranges on the market.

The index fell in the last 3 months of 1991 when Florida once again entered the market with lower-priced oranges. Although the December 1991 index of grower prices for fresh fruit was down 50 percent from September, it remained 7 percent above the previous year. This index averaged 295 in 1991, 50 percent higher than in 1990. The index for all fruit was up 44 percent.

During the summer of 1991, fresh fruit grower price indexes primarily were a reflection of California Valencia orange prices. The freeze had reduced California's 1991 Valencia crop to less than half of normal, most

of which were marketed before summer, and prices rose accordingly. Monthly grower prices (on-tree-equi-

valent returns) averaged \$15.53 a box for 1990/91 crop, compared to \$8.57 a box for the 1989/90. The highest

Figure 1

### Prices Received by Growers

1977=100

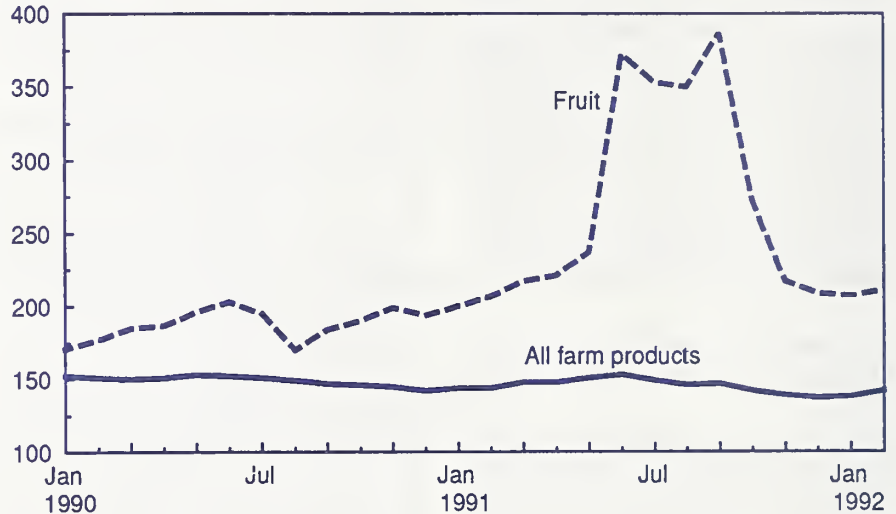
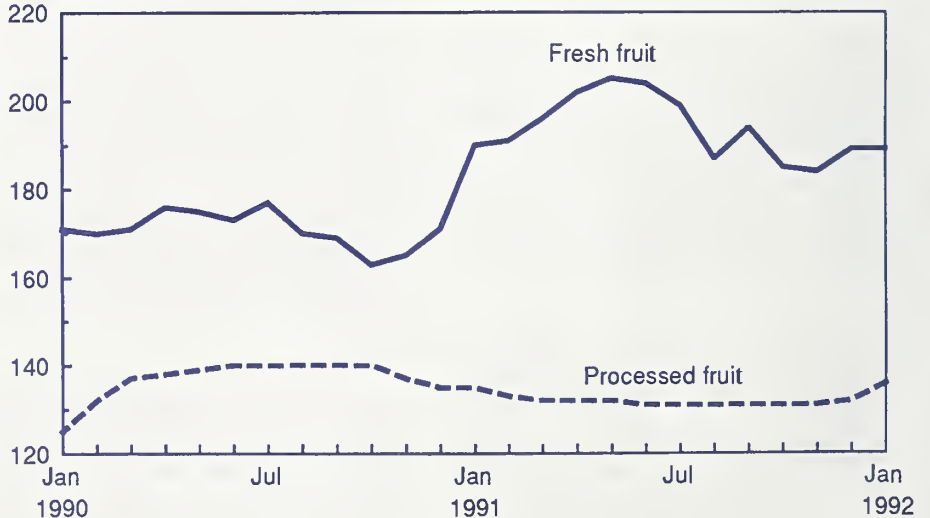


Figure 2

### Consumer Price Index

1982-84=100



prices were reported between \$27 and \$29 from June through September, when there were minimal marketings.

Since the new crop harvest began fresh orange prices have come down sharply, dropping to \$14.68 a box in October 1991, and to \$9.18 in February 1992. Fresh orange prices are likely to decline further as more of the California crop is marketed.

### Apple Prices Edge Lower

Although 1991 apple production increased 4 percent from the small 1990 crop, strong demand kept grower prices up in 1991. Monthly prices were at least 20 cents a pound, peaking in September at 29.1 cents a pound. In January and February 1992, grower prices for fresh apples were down to 24.9 cents. With limited supplies in storage and a good European market, apple prices are not likely to decline as rapidly as fresh-market orange prices in the next few months.

### Consumer Prices for Fresh Fruit Higher in 1991

Last season's limited supply of fresh California oranges and strong demand for the high-quality apple crop were reflected in higher consumer prices. In May and June 1991 the Consumer Price Index (CPI) for

fresh fruit was nearly 18 percent higher than in the same period of 1990. In October 1991, when prices of apples, bananas, and oranges were all lower, the CPI for fresh fruit was down 9 percent from May and June.

The CPI for bananas was at its highest point in May 1991, 28 percent above the year before. Cool weather delayed crop maturity in some of the banana growing regions of Central and South America, but imports picked up in June. By October, banana prices were down 32 percent from May. For the entire year, total imports were up 4 percent, and the CPI for bananas averaged just 5 percent higher than in 1990.

Consumer prices for fresh apples averaged 18 percent higher in 1991 than in 1990. In May and June 1991, the CPI was 24 percent higher than the year before. The index peaked in August, as usual, and was down 16 percent by October. During November and December 1991 retail prices of fresh apples were still 12 percent higher than in the same period of 1990.

Higher orange prices gave the biggest boost to consumer fresh fruit prices. The 1991 CPI for fresh oranges and tangerines averaged 55 percent higher than in 1990. The June 1991 index of fresh orange and tangerine prices was up 58 percent from the year before

and continued to rise in each succeeding month through September. By December 1991, consumer prices had come down but were still 22 percent above a year earlier. Increased availability of fresh oranges in the 1991/92 season will continue the downward pressure on retail fresh fruit prices into the summer.

The consumer price index for processed fruit averaged 4 percent lower in 1991 than in 1990, due to larger supplies of strawberries and oranges for processing. Wholesale prices for frozen sliced strawberries were down 8 percent from 1990. Prices were below a year earlier from July through December 1991. The f.o.b. price for strawberries for processing was 20 cents less than in January 1991.

Retail prices for 42-degree-Brix frozen concentrate orange juice (FCOJ) averaged \$1.84 a pound in 1991, nearly 15 percent less than in 1990. The December 1989 freeze cut Florida's FCOJ production and retail prices were over \$2 a pound through most of 1990. Florida FCOJ production was up in 1990/91 but is expected to be down slightly this season. Retail prices for orange juice rose 8 percent in January 1992 from the month before. Increasing Brazilian imports will keep downward pressure on FCOJ retail prices.

Table 1--Consumer price indexes, United States, by month, 1989-91

Month	Apples				Bananas				Oranges and tangerines			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
1982=100												
January	139	130	158	173	113	126	131	129	131	149	206	188
February	144	137	162	177	120	146	144	150	126	159	224	179
March	146	140	164		131	150	173		129	159	235	
April	143	139	166		153	145	164		130	154	246	
May	143	140	173		155	138	176		136	158	244	
June	146	147	183		140	132	160		154	172	271	
July	145	157	190		134	160	156		165	171	286	
August	153	168	193		127	137	126		169	170	299	
September	145	165	190		126	139	131		166	168	317	
October	132	148	162		128	129	120		168	156	272	
November	125	147	164		127	128	132		152	159	206	
December	125	152	170		123	128	128		139	153	187	
Average	140	147	173		131	138	145		147	161	249	

Source: Bureau of Labor Statistics, U.S. Department of Labor.

## U.S. Citrus Production Forecast Up 7 Percent in 1991/92

*The March forecast of 1991/92 U.S. orange production was 6 percent higher than the first forecast (last October) and 11 percent more than the 1990/91 production estimate. Grapefruit and lemon production were still expected to decline in 1991/92.*

The total U.S. citrus crop is expected to reach 12.1 million short tons in the 1991/92 season. USDA's March forecast of citrus production was 4 percent higher than the first forecast (October 1991). If the March forecast is realized, this season's citrus crop would be 7 percent larger than in 1990/91, 12 percent more than in 1989/90, but 9 percent less than in 1988/89. In the two seasons prior to 1991/92, citrus crops were damaged by freezing weather in Florida and Texas in December 1989 and California in December 1990.

### U.S. Orange Crop 11 Percent Larger Than Last Season

The March 1992 forecast of U.S. orange production in 1991/92 was up 11 percent from last season's production, rather than the 4-percent increase that had been forecast in October 1991. Increases in the California orange production forecast were responsible for most of the change. The March forecast for Florida orange production was down 8 percent from 1990/91.

The harvest of early and midseason varieties that usually account for more than half of Florida's production was complete in February. Production was 4 percent more than expected last October, but down 5 percent from last season. The Florida's Valencia orange crop is still forecast down 12 percent from 1990/91.

California is making a remarkable recovery from the devastating freeze that brought the State's 1990/91 orange production down 64 percent from the prior year. In the 1991/92

season, California is expected to produce 146 percent more oranges than last season. If realized, the 1991/92

California orange crop would be the fourth largest on record.

Table 2--Citrus fruit: Production, 1989/90-1990/91 and indicated 1991/92

Crop and State	Utilized		Indicated 1991/92	
	1989/90	1990/91	10-10-91	3-11-92
1,000 short tons				
<b>ORANGES:</b>				
Arizona	59	65	79	80
California	2,677	961	1,988	2,363
Florida	4,958	6,817	6,120	6,273
Texas	51	1/	4	1
Total	7,745	7,843	8,191	8,717
<b>GRAPEFRUIT:</b>				
Florida, all	1,518	1,916	1,807	1,781
Arizona	70	77	74	74
California 2/	310	262	310	310
Texas	80	1/	5	3
Total	1,978	2,255	2,196	2,168
<b>LEMONS:</b>				
Arizona	106	156	175	175
California	600	566	513	513
Total	706	722	688	688
<b>TANGELOS:</b>				
Florida	132	119	117	119
<b>TANGERINES:</b>				
Arizona	22	23	26	32
California	62	49	56	56
Florida	80	92	124	115
Total	164	164	206	203
<b>TEMPLES:</b>				
Florida	63	113	117	117
<b>LIMES:</b>				
Florida	73	64	70	70
<b>TOTAL:</b>				
Arizona	10,861	11,280	11,585	12,082
California	257	321	354	361
Florida	3,649	1,838	2,867	3,242
Florida	6,824	9,121	8,355	8,475
Texas	131	1/	9	4

1/ Due to the severe freeze of December 1989, Texas had no commercial production for the 1990/91 season.

2/ Total based on 1989/90 California production in other areas.

Source: National Agricultural Statistics Service, USDA.

The March forecast of the California orange crop was 19 percent higher than the first forecast in October 1991. California navel orange production was forecast to double last season's (a 115-percent increase), while Valencia orange production was forecast to nearly triple (up 196 percent) last season's production. The California navel orange harvest was 44 percent complete at the beginning of March, and the production forecast increased 17 percent from October. Oranges were smaller than average but quality was reported as good. Although harvest had not begun, the March forecast for California Valencias was up 21 percent from the October forecast.

Arizona's navel orange crop was forecast up 35 percent and the Valencia orange crop was up 18 percent from 1990/91. Because the December 1989 freeze in Texas destroyed many citrus trees, 1991/92 orange production was expected to be minimal at the beginning of the season. With the early harvest complete, the March production forecast was reduced 75 percent from the October forecast. Texas had no commercial production in 1990/91, due to the December 1989 freeze.

#### Florida Grapefruit Production Down 7 Percent From Last Year

With the Florida grapefruit harvest 77 percent finished, the March production forecast was 1 percent lower than the October forecast, and 7 percent less than 1990/91 production. March forecasts for Arizona and California's Desert Valley were unchanged from October, with Arizona expected to be down 4 percent and the California Desert unchanged from last season. The first grapefruit production forecast for California's "other areas" will be available in April 1992. If production in the other areas returns to the 1989/90 level, then California production would be up 18 percent from 1990/91, lowering U.S. grapefruit production about 4 percent from last season.

The February forecast of the 1991/92 Texas grapefruit crop was reduced by 40 percent, to 3,000 short tons, and remained the same in March. Even this small crop represents some recovery as Texas had no commercial grapefruit production in 1990/91. Before the December 1989 freeze, Texas grapefruit crops were significantly larger than this year's crop. In the five seasons prior to 1990/91, Texas production averaged 80,000 tons, compared to a 50,000-ton average for Arizona grapefruit.

#### Lemon Production Not Expected To Recover Completely From 1990 Freeze

The March forecast of the 1991/92 U.S. lemon crop was down 5 percent from last season. For California, the major producer of lemons, a decline of 9 percent was indicated as a result of the December 1990 freeze that damaged the developing 1991/92 crop as well as many lemon trees. Arizona's lemon crop forecast was 12 per-

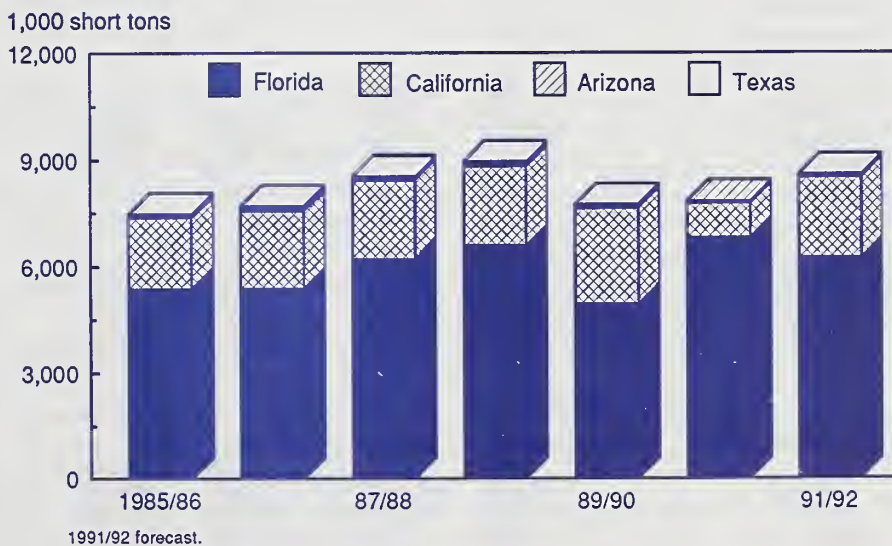
cent larger than the 1990/91 crop. The 1991/92 Florida lime crop forecast was unchanged from the October forecast, 10 percent larger than last season.

**Larger Tangerine and Temple Crops**  
U.S. tangerine production was forecast in March to increase 24 percent from last season. In Florida, the tangerine harvest was nearly complete by the first of March, and the crop was expected to be 25 percent larger than last season's. California and Arizona tangerine crops were also forecast up from last year, 15 percent and 42 percent, respectively.

The Florida tangelo harvest was complete in February. The 1991/92 crop was the same as 1990/91's and 2 percent larger than anticipated at the beginning of the season. Harvest of Temples was 81 percent complete by the beginning of March, and 1991/92 production was forecast 4 percent above the 1990/91 crop.

Figure 3

#### All Oranges: Production by State



## Fresh-Market Orange Production Rebounds From 1990/91

*California's orange crop was forecast to be up 146 percent from last year's freeze-reduced crop, but navel orange shipments started sluggishly. Orange prices receded from record-high 1991 levels as fresh orange marketings began to recover in the 1991/92 season.*

California is making a remarkable recovery from the devastating freeze that cut 1990/91 production by 64 percent. The 1991/92 California orange crop is expected to be 146 percent larger than last season. Although the March forecast for the 1991/92 crop was 12 percent smaller than the 1989/90 crop, it would still be the fourth largest since 1969/70, and exceed the five-season average (1985/86 through 1989/90).

Only 15 percent of U.S.-produced oranges were marketed fresh in the 1990/91 season, compared to the past five seasons when fresh utilization averaged 23 percent of production.

California usually provides over 70 percent of the U.S.-produced fresh-market oranges, but last season the proportion fell to only 47 percent. Florida's share of the fresh market was well above normal, rising to 46 percent of all U.S.-produced fresh oranges in 1990/91, compared to the five-season average of 22 percent.

Not only was the orange crop reduced by the freeze, but a smaller share of California production was used for the fresh market in 1990/91. Only 58 percent of California navels were marketed fresh, with the rest diverted to processing, compared to a five-season average of 73 percent

processing represented the successful used fresh. An increased share for salvage of freeze-damaged fruit as well as the new de-bittering technology for navel oranges. The proportion of Valencias utilized fresh in 1990/91 was 71 percent, compared to about 60 percent in prior years.

In contrast, a larger-than-usual share of Florida's later-maturing oranges went to the fresh market. In 1990/91, 10 percent of Valencia oranges and 32 percent of Temples were used fresh, compared to their five-season average of 6 and 26 percent, respectively.

Table 3--Oranges: Utilized production, 1989/90-1990/91 and indicated 1991/92 1/

Crop and State	Utilized		Indicated 1991/92		Utilized		Indicated 1991/92	
	1989/90	1990/91	10-10-91	3-11-92	1989/90	1990/91	10-10-91	3-11-92
	1,000 boxes 2/				1,000 short tons			
ORANGES:								
Early, midseason, and								
navel varieties 3/:								
Arizona	390	550	700	720	14	20	26	27
California	44,300	15,800	29,000	34,000	1,661	593	1,088	1,275
Florida	68,100	87,500	80,000	83,400	3,064	3,937	3,600	3,753
Texas	1,050	4/	60	20	44	4/	3	1
Total					4,783	4,550	4,717	5,056
Valencias:								
Arizona	1,220	1,200	1,400	1,400	45	45	53	53
California	27,100	9,800	24,000	29,000	1,016	368	900	1,088
Florida	42,100	64,000	56,000	56,000	1,894	2,880	2,520	2,520
Texas	155	4/	35	10	7	4/	1	0
Total					2,962	3,293	3,474	3,661
All oranges:								
Arizona	1,610	1,750	2,100	2,120	59	65	79	80
California	71,400	25,600	53,000	63,000	2,677	961	1,988	2,363
Florida	110,200	151,500	136,000	139,400	4,958	6,817	6,120	6,273
Texas	1,205	4/	95	30	51	4/	4	1
Total					7,745	7,843	8,191	8,717

1/ The crop year begins with bloom of the first year shown and ends with completion of harvest the following year.

2/ Net pounds per box: California and Arizona-75, Florida-90, Texas-85.

3/ Navel and miscellaneous varieties in California and Arizona. Early and midseason varieties in Florida and Texas, including small quantities of tangerines in Texas.

4/ Due to the severe freeze of December 1989, Texas had no commercial production the 1990/91 season.

Source: National Agricultural Statistics Service, USDA.

## California-Arizona Orange Shipments Ahead of Last Season

California navel oranges matured somewhat later than normal this season and their harvest was delayed by rain. Shipments from California and Arizona in November 1991 were about one-third of November 1990 shipments. California-Arizona shipments increased in December 1991 to 139,400 tons, but were nearly 15 percent less than in December 1990 and 1989. Fresh shipments in January 1992 were 94,900 tons, compared to 35,500 tons in January 1991, immediately following the freeze.

Domestic fresh orange shipments from Florida in October and November 1991 amounted to nearly 140,900 tons, compared to 75,500 tons during the same 2 months in 1990. This was in response to the lack of 1990/91-crop California Valencias and the lateness of the California navel orange harvest. Later in the season, Florida shipments declined, as the volume of California navel shipments picked up. Florida orange shipments in January and February 1992 totaled 69,900 tons, 26 percent less than in 1991, when Florida shipments were much higher than normal in response to the short supply and higher prices for fresh oranges.

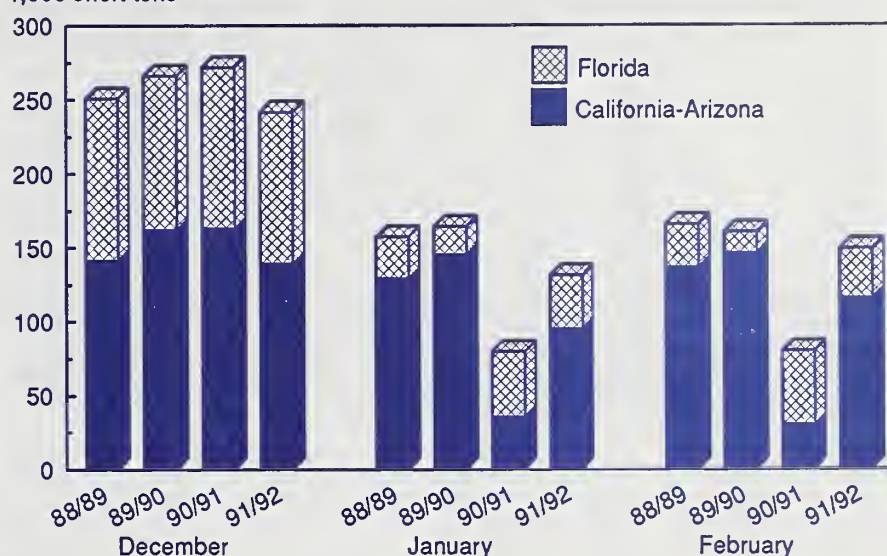
Since the beginning of the 1991/92 California-Arizona orange season in the first week of November through the third week of February, 377,200 tons of oranges have been shipped from California-Arizona districts, 20 percent more than in the same period in 1990/91. Shipments of Florida oranges so far this season (the first week of October through the third week in February) totaled 312,800 tons, 12 percent more than in the same period in 1990/91.

USDA suspended prorate restrictions on weekly volumes of navel orange shipments from California and Arizona marketing districts on February 12, 1992. Increased shipments, lower prices, and market promotions are expected to stimulate demand and retail movement of fresh oranges.

Figure 4

## U.S. Fresh Orange Shipments

1,000 short tons



### Fresh Orange Exports Decline in 1990/91

U.S. fresh orange exports for the 1990/91 marketing year (November through October) were down more than 50 percent from 1989/90. After the California freeze, exports dropped sharply and, from January through September 1991, orange exports were down more than 65 percent from the same period in 1990.

Last season, fresh orange exports amounted to just 3 percent of U.S. production, while in 1989/90, they were 7 percent. Canada received 37 percent of U.S. orange exports in 1990/91, 30 percent went to Japan, and 23 percent to Hong Kong.

Early this season (October-December 1991), fresh orange exports were 41 percent less than a year earlier, and 17 percent less than in the same period in 1989. The California navel crop matured later than usual this year and, as a result, exports could pick up sharply in the next few months. The Japanese import quota on U.S. oranges was completely lifted in April 1991. With an adequate supply of high-quality oranges this season, exports to Japan are expected to increase. Imports to Japan are subject to 20-40 percent tariffs.

Fresh orange imports rose to 68,700 short tons in 1990/91, reflecting the sharp drop in U.S. supplies in the 1990/91 season. Between January and September 1991, about 6 times as many oranges were imported to the United States as in the same 9-month period the year before. In 1990/91, 40 percent of U.S. imports were from Mexico, 20 percent from Spain, 15 percent from Morocco, and 8 percent from Israel.

Late in 1991 (October through December), imports were 7 times higher than in prior years. Fresh orange imports totaled more than 7,000 tons, with 65 percent from Morocco and 20 percent from Mexico. In January and February, shipments of California-Arizona oranges increased, probably discouraging additional imports.

### Fresh Orange Prices Plummet From 1991 Peak

The U.S. price (on-tree-equivalent returns to growers) for fresh oranges was down to less than \$10 a box in February 1992 for the first time since October 1990. February fresh orange prices stood at \$9.56 a box for California, \$8.26 for Arizona, and \$8.03 for Florida, down 66 percent, 59 percent, and 13 percent, respectively, from February 1991. February prices

Table 4--Oranges: U.S.-average equivalent on-tree price received by growers, 1989-92

Month	All oranges				Fresh oranges				Process oranges			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
Dollars per box												
January	6.51	5.92	6.35	5.93	6.91	8.57	18.56	11.14	6.45	5.59	5.40	5.40
February	6.45	5.82	6.80	6.90	6.18	8.33	15.21	9.18	6.50	5.20	5.23	5.63
March	6.26	6.01	7.51		6.57	7.72	13.93		6.09	5.31	6.71	
April	7.28	6.48	7.72		6.88	7.33	14.26		7.39	6.16	7.01	
May	8.39	7.01	8.57		8.71	9.60	17.68		8.33	5.83	6.85	
June	8.51	6.78	20.06		9.90	9.55	28.03		8.17	2.55	-0.52	
July	7.27	5.98	18.74		10.36	9.33	26.89		2.54	2.16	-0.52	
August	6.52	4.62	19.59		9.76	8.16	27.89		2.12	0.96	-0.32	
September	6.54	4.71	21.97		9.96	8.56	28.89		1.70	0.76	-0.10	
October	6.29	5.31	11.09		9.55	7.16	14.68		1.56	4.53	2.95	
November	7.34	6.44	5.91		9.56	10.40	12.71		4.74	5.60	4.11	
December	6.34	6.31	5.95		8.38	10.84	12.46		5.70	5.35	4.57	

Source: National Agricultural Statistics Service, USDA.

Table 5--All oranges: State-average equivalent on-tree price received by growers, 1989-92

Month	Arizona				California			
	1989	1990	1991	1992	1989	1990	1991	1992
Dollars/75-lb. box					Dollars/75-lb. box			
January	6.28	8.88	18.13	11.10	5.40	6.70	6.48	11.17
February	5.24	8.71	14.72	7.30	4.49	6.27	7.39	8.02
March	7.31	6.89	20.99		4.90	5.57	13.06	
April	3.89	5.94	15.68		5.24	5.22	17.97	
May	3.98	6.04	20.00		6.52	6.96	21.39	
June	6.31	4.85	7.09		6.66	6.84	20.14	
July	6.20	2.34	--		7.28	5.99	18.74	
August	--	--	--		6.52	4.62	19.59	
September	--	--	--		6.54	4.71	21.97	
October	--	--	--		6.23	3.92	23.23	
November	10.17	11.06	20.79		7.96	10.23	23.42	
December	8.04	9.76	10.61		7.06	9.84	12.19	

	Florida				Texas			
	1989	1990	1991	1992	1989	1990	1991	1992
Dollars/90-lb. box					Dollars/85-lb. box			
January	6.68	5.82	6.27	5.51	6.12	3.96	--	13.80
February	6.91	5.69	6.61	6.35	5.97	2.43	--	--
March	7.05	6.26	7.02		5.46	--	--	
April	7.94	7.31	7.28		5.29	--	--	
May	8.83	7.10	7.31		3.03	--	--	
June	9.27	--	--		--	--	--	
July	--	--	--		--	--	--	
August	--	--	--		--	--	--	
September	--	--	--		--	--	--	
October	--	6.08	8.78		8.98	--	--	
November	6.79	5.87	4.85		8.48	--	13.10	
December	6.21	5.81	5.14		5.33	--	14.50	

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

were also down sharply from the beginning of the 1991/92 season. California and Arizona fresh orange prices were 64-65 percent less than in November 1991, and the Florida price was down 30 percent from October 1991.

The last week of December 1990, immediately after the California freeze

California-Arizona f.o.b. orange prices jumped to \$20 per carton (37.5 pound carton, 113 size) from \$7.50 the previous 2 weeks. Prices fluctuated between \$15 and \$22 per carton until November 1991, when the new crop marketings began and prices averaged \$9.10 per carton for the month. In December and January, weekly f.o.b. prices were between \$8

and \$10 per carton. The downward trend continued in February 1992 with the f.o.b. price down another \$1 per carton following suspension of prorate February 12.

Table 6--Fresh-market oranges: State-average equivalent on-tree price received by growers, 1989-92

Month	Arizona				California			
	1989	1990	1991	1992	1989	1990	1991	1992
	Dollars/75-lb. box				Dollars/75-lb. box			
January	6.79	9.47	20.86	11.96	7.09	7.87	24.56	12.76
February	6.66	9.77	19.99	8.26	6.19	7.77	27.86	9.56
March	9.36	8.66	26.09		6.61	7.21	26.92	
April	6.36	7.46	21.49		6.96	6.96	31.12	
May	6.26	7.96	26.19		8.89	9.49	28.69	
June	9.56	6.66	14.89		9.52	9.63	28.09	
July	9.86	2.24	--		10.36	9.36	26.89	
August	--	--	--		9.76	8.16	27.89	
September	--	--	--		9.96	8.56	28.89	
October	--	--	--		9.54	6.86	27.69	
November	11.27	11.96	23.66		9.92	12.26	26.66	
December	8.97	11.66	12.46		8.17	11.86	13.86	
	Florida				Texas			
	1989	1990	1991	1992	1989	1990	1991	1992
	Dollars/90-lb. box				Dollars/85-lb. box			
January	6.15	13.93	11.35	7.45	6.56	7.91	--	13.80
February	5.85	13.89	9.26	8.03	6.52	--	--	--
March	6.05	13.15	8.95		5.97	--	--	
April	6.75	13.45	8.95		5.72	--	--	
May	8.35	15.65	8.95		--	--	--	
June	12.95	--	--		--	--	--	
July	--	--	--		--	--	--	
August	--	--	--		--	--	--	
September	--	--	--		--	--	--	
October	--	7.65	11.55		9.83	--	--	
November	8.95	7.25	8.35		9.23	--	13.10	
December	8.95	9.35	10.65		6.80	--	14.50	

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

## Fewer Oranges for Processing

*Florida's orange crop forecast was up 3 percent from October, but was 8 percent less than last year's crop. Less Florida orange juice was available after 10 processing weeks than at the same time in the 1990/91 season.*

The March forecast of Florida's 1991/92 crop of early and midseason oranges was 4 percent larger than the October forecast, indicating 5 percent less production than last season. The February forecast for Valencias was still down 12 percent from 1990/91, resulting in a projected decline of 8 percent for Florida orange production in 1991/92.

The size of the Florida crop affects the U.S. orange juice supply. For the past five seasons, Florida has provided an average of 89 percent of U.S.-produced processing oranges and 64 percent of the U.S. orange juice supply. Last season, 92 percent of Florida's round oranges (early and mid-season varieties, navels, and Valencias) and Temples were processed, close to the five-year average of 93 percent.

In 1990/91, about 85 percent of the oranges produced in the United States were processed; a little higher than the five-season average of 77 percent, because more California oranges were processed (41 percent compared to the five-season average of 33 percent). The December 1990 freeze damaged California's oranges, causing the volume of fresh marketings to drop, and, in January, many oranges that normally would have been shipped to the fresh market were salvaged for processing. The relatively good quality of this season's crop will result in a drop in the share of California oranges used for processing, back closer to the average amount.

### Florida Orange Juice Production Down This Season

Early in the Florida marketing year (the end of November 1991), 17 per-

cent of the round oranges picked had been utilized fresh and 83 percent had been processed. Later in the season, the percentage used for processing increased, so that by February 9, 1992, 91 percent of Florida's 1991/92 orange production had been used for processing. The Florida processing season began the first of December, and February 9, 1992, was the 10th week of the season. It usually takes about 30 weeks to process the Florida orange crop.

According to Florida processors' reports, nearly 80 percent of the oranges that had been processed during the first 10 weeks of the season were used for frozen concentrate orange juice (FCOJ), with the rest for chilled product and canned single-strength orange juice. After 10 weeks of processing, the available supply of Florida FCOJ was 131 million 42-degree-Brix gallons, 10 percent less than at the same time last season.

After 10 weeks of processing, all of the factors that determine the available supply of Florida FCOJ were less than they were last season. Product-on-hand on November 30, 1991, was 20 percent less than it had been December 1, 1990. Net production of FCOJ from fruit, as of February 9, 1992, stood at 86 million 42-degree-Brix gallons, down nearly 4 percent from last season. Imports of foreign product totaled 10 million gallons, compared to 14 million gallons last season, contributing to total other supply of 13 million gallons, 22 percent below last year.

Movement (retail, institutional, and delivery to fulfill contracts) was down just 2 percent, leaving product-on-hand down 14 percent from the 10th week of the 1990/91 season. Higher retail prices are likely to slow movement and increased imports will raise product-on-hand later in the season.

Table 7--Oranges used for frozen concentrate, Florida, 1984/85-1991/92

Season	Orange and	Used for		Yield
	Temple	frozen concentrate 1/	Percent	per box
	production			
	Million boxes 2/			Gallons 3/
1984/85	107.2	86.1	80.3	1.38
1985/86	122.0	96.1	78.8	1.38
1986/87	123.1	96.2	78.1	1.51
1987/88	141.6	109.4	77.3	1.55
1988/89	150.4	113.7	75.6	1.54
1989/90	111.6	73.6	65.9	1.23
1990/91	154.0	104.1	67.6	1.45
1991/92 4/	141.6	92.0	65.0	1.51

1/ Includes tangelos, Temples, tangerines, and K-early citrus.

2/ Picking boxes weight approximately 90 pounds.

3/ Gallons per box at 42.0 degrees Brix equivalent.

4/ Forecast, February 1992.

Sources: National Agricultural Statistics Service, USDA, Florida Citrus Processors Association and the Florida Department of Citrus.

The Foreign Agricultural Service's March 1992 forecast of all U.S. orange juice production in the 1991/92 season (December through November) was 890 million single-strength gallons, approximately the same as last season. Florida orange juice production is expected to be down slightly, but production in other States is expected to increase from last season. U.S. orange juice imports were projected to increase 16 percent.

#### Brazil Increases FCOJ Exports in 1991/92

During the first 7 months of Brazil's 1991/92 processing season (July 1991 through January 1992), FCOJ exports reached 79 million 42-degree-Brix gallons. Europe received 52 percent of those exports and the United States 37 percent. During the entire 1990/91 season Europe accounted for 50 percent and the United States accounted for 32 percent of Brazil's exports. Brazil's total FCOJ exports from July 1991 through January 1992 were 27 percent more than the same period of its 1990/91 season.

U.S. FCOJ imports were down 34 percent in the 1990/91 season (December through November) from the 1989/90 season. In the 1990/91 season, U.S. imports of FCOJ totaled 80 million 42-degree-Brix gallons, with 83 percent from Brazil and most of the remainder from Mexico. The previous season, when Florida's orange production was reduced by the freeze, the United States imported about 100 million gallons of Brazilian FCOJ.

During the first 2 months of the 1991/92 Florida processing season (December and January), U.S. imports from Brazil were 20 million 42-degree-Brix gallons. Last season, U.S. imports from Brazil were lower in both months, 15 million gallons in December 1990 and January 1991. Destinations of Brazil's December and January exports were nearly evenly divided between Europe (43 percent) and the United States (40 percent).

Table 8--Florida orange-juice production, 1979/80-1991/92

Season	Frozen	Canned	Chilled 2/	Total
	concentrate 1/	single strength 2/	Million SSE gallons 3/	
1979/80	1,014.0	36.5	134.8	1,185.3
1980/81	732.9	28.8	95.7	857.4
1981/82	538.4	20.6	84.6	643.6
1982/83	684.9	12.3	104.3	801.5
1983/84	489.6	10.9	92.8	593.3
1984/85	478.5	6.1	82.5	567.1
1985/86	534.8	7.1	97.2	639.1
1986/87	585.9	5.3	115.7	706.9
1987/88	686.5	4.8	139.4	830.7
1988/89	705.7	6.4	173.9	886.0
1989/90	364.7	3.4	173.4	541.4
1990/91	611.5	3.2	225.9	840.6
1991/92 4/	575.6	3.4	213.4	792.4

1/ Pack from fruit, Florida Citrus Processors Association.

2/ Utilization multiplied by yield, Florida Citrus Processors Association.

3/ SSE = single-strength equivalent.

4/ Forecast, February 1992.

Source: Florida Department of Citrus.

Table 9--United States: Orange juice supply and utilization, 1985/86-1991/92

Season 1/	Beginning stocks	Production	Import	Export	Domestic consumption	Ending stocks 2/
Million SSE gallons 3/						
1985/86	249	684	546	71	1,205	204
1986/87	204	783	556	73	1,268	201
1987/88	201	910	412	90	1,221	212
1988/89	212	973	382	98	1,236	232
1989/90	232	652	492	90	1,061	225
1990/91	225	888	327	96	1,186	158
1991/92 4/	158	890	380	96	1,174	158

1/ Season begins in December of the first year shown.

2/ Data may not add due to rounding.

3/ SSE = single-strength equivalent.

4/ Forecast, March 1992.

Source: Foreign Agricultural Service, USDA.

Table 10--Brazilian FCOJ production and utilization, 1986/87-1991/92

Season 1/	Beginning stocks	Production	Domestic consumption	Exports	Ending stocks 2/
Million SSE gallons 3/					
1986/87	284	848	28	983	121
1987/88	121	998	28	1,038	53
1988/89	53	1,002	28	994	34
1989/90	34	1,476	28	1,348	134
1990/91	134	1,202	28	1,142	166
1991/92 4	166	1,160	28	1,181	117

1/ Season begins in July of the first year shown.

2/ Data may not add due to rounding.

3/ SSE = single-strength equivalent.

4/ Forecast, March 1992.

Source: Foreign Agricultural Service, USDA.

The Foreign Agricultural Service forecast in March 1992 indicated that Brazilian FCOJ production for the entire 1991/92 season (July 1991 through June 1992) would decline nearly 4 percent from 1990/91. However, Brazil was expected to export about 3 percent more FCOJ in 1991/92 than the year before.

#### Prices Below Last Season for Processing Oranges

Prices that growers receive for processing oranges depend on 1) the

price per pound solids and 2) the juice yield per box. The juice yield is expected to be 1.52 gallons per box, 5 percent higher than last season. Despite higher juice yields and a smaller orange crop this season, grower prices (on-tree-equivalent returns) for Florida processing oranges have been below last season. Since November 1991, monthly grower prices averaged \$5.10 per box, compared to \$5.89 in the same period last season. The February 1992 price, while still below February 1991, was up 12 percent from the prior month.

FCOJ futures prices rose sharply after USDA's October 1991 forecast for 1991/92 Florida orange production was released because the industry had anticipated a larger crop forecast. Nearby futures that had averaged \$1.19 per pound solids in September 1991, rose to an average of \$1.50 in October and \$1.73 in November, before declining to \$1.64 in December. By the last week of January 1992, the price was down to \$1.44, dropping to a low of \$1.40 in mid-February before moving up again.

Table 11--Processing oranges: State-average equivalent on-tree price received by growers, 1989-92

Month	Arizona				California			
	1989	1990	1991	1992	1989	1990	1991	1992
	Dollars/75-lb. box				Dollars/75-lb. box			
January	-0.69	1.18	-0.83	-0.07	-0.69	1.18	-0.83	-0.07
February	-0.10	2.05	-0.72	0.29	-0.33	1.90	-0.83	0.29
March	0.14	2.36	-0.72		0.38	2.16	-0.80	
April	0.64	2.36	-0.92		0.77	2.18	-0.91	
May	1.08	2.62	-0.32		1.27	2.47	-0.52	
June	2.36	2.62	-0.72		2.31	2.55	-0.52	
July	2.54	2.82	--		2.54	2.16	-0.52	
August	--	--	--		2.12	0.96	-0.32	
September	--	--	--		1.70	0.76	-0.10	
October	--	--	--		1.55	0.76	-0.32	
November	0.52	-0.83	-0.27		1.40	-0.76	-0.27	
December	1.08	-0.83	-0.27		1.08	-0.83	-0.27	

	Florida				Texas			
	1989	1990	1991	1992	1989	1990	1991	1992
	Dollars/90-lb. box				Dollars/85-lb. box			
January	6.69	5.70	6.08	5.45	4.12	3.61	--	--
February	6.93	5.50	6.22	6.13	3.74	2.43	--	--
March	7.17	6.00	6.85		3.03	--	--	
April	7.99	7.15	7.15		3.03	--	--	
May	8.85	6.95	7.05		3.03	--	--	
June	9.15	--	--		--	--	--	
July	--	--	--		--	--	--	
August	--	--	--		--	--	--	
September	--	--	--		--	--	--	
October	--	5.75	3.25		3.27	--	--	
November	5.60	5.76	4.15		3.08	--	--	
December	5.90	5.50	4.65		3.06	--	--	

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

## More Tangerines and Temples Produced in 1991/92

*Exports of fresh tangerines and Temple oranges increased, along with domestic shipments. Processing prices of Temples and tangelos gained this season as fresh prices dropped back.*

The U.S. tangerine crop is expected to be up 24 percent this season (October through May) from 1990/91. Florida produces 50-60 percent of U.S. tangerines, California produces 25-35 percent, with Arizona providing the rest. Production was forecast up in all three States where tangerines are grown commercially: California up 14 percent, Arizona up 39 percent, and Florida up 25 percent. The March forecast of Florida's production was 7 percent lower than the first forecast in October, and 17 percent less than the five-season high of 138,000 short tons in 1988/89.

### Fresh Tangerine Shipments Increase

In Florida, the early and midseason tangerine harvest was complete in mid-February, and by March 1, 13 percent of the Honey tangerines remained to be harvested. Preliminary data indicated 74 percent of all Florida tangerines used by March 1 went to the fresh market and the rest were processed.

In the past five seasons, an average of 68 percent of U.S. tangerines have been utilized fresh. A higher proportion of California and Arizona tangerines have gone to the fresh market (75-80 percent) than Florida tangerines (60 percent) in the past five seasons. In the 1990/91 season, 83 percent of Arizona tangerines, 79 percent of California's, and 63 percent of Florida's tangerines were utilized fresh.

### Tangerine Prices Remain Strong

December 1991 grower prices (on-tree-equivalent returns) in Arizona were down 20 percent from the year earlier, but were 16 percent higher in California, and up 3 percent in Florida. January and February 1992 prices were lower than they were the year earlier in Arizona and Florida. The California tangerine price was also below the year earlier in January, but the February price was 8 percent higher than a year earlier.

Prices for fresh tangerine shipments from California's Coachella Valley were relatively high at the start of the 1991/92 season. In December 1991, weekly f.o.b. prices averaged \$3 per carton higher than a year earlier. By January 1992, f.o.b. prices for tangerines were lower, \$15.42 per carton, compared to \$17.06 in January 1991. The downward trend continued into the first week in February when the f.o.b. price slid to \$14.95 per carton, reflecting this season's increased supplies of California oranges.

### Tangerine Exports Increase and Imports Decline

In 1990/91 (October through September), U.S. exports of tangerines totaled 9,000 short tons, 5 percent of total production. Tangerine exports were up 33 percent in 1990/91, compared to the previous season. Canada received most of the U.S. tangerine exports, 85 percent in 1989/90 and 90 percent in 1990/91. Satsumas,

Table 12--Other citrus: Utilized production, 1989/90-1990/91 and indicated 1991/92 1/

Crop and State	Utilized		Indicated 1991/92		Utilized		Indicated 1991/92	
	1989/90	1990/91	10-10-91	3-11-92	1989/90	1990/91	10-10-91	3-11-92
	1,000 boxes 2/				1,000 short tons			
TANGELOS:								
Florida	2,950	2,650	2,600	2,650	132	119	117	119
TANGERINES:								
Arizona	600	600	700	850	22	23	26	32
California	1,650	1,300	1,500	1,500	62	49	56	56
Florida	1,700	1,950	2,600	2,430	80	92	124	115
Total	3,950	3,850	4,800	4,780	164	164	206	203
TEMPLES:								
Florida	1,400	2,500	2,600	2,600	63	113	117	117

1/ The crop year begins with bloom of the first year shown and ends with completion of harvest the following year.

2/ Net pounds per box: tangerines-California and Arizona-75, Florida-95 tangelos and Temples-90.

Source: National Agricultural Statistics Service, USDA.

a type of tangerine, are the major citrus fruit grown in Japan, and imports from the United States are usually small compared to the total supply.

Tangerine imports to the United States were 7 percent of U.S. production in 1990/91, with Mexico providing all but about 1 percent. Imports were down about 10 percent in 1990/91, to 11,700 short tons. Early in the current season (October through December 1991), imports were down 11 percent and exports were up 9 percent, compared to the

same period last season. Increased U.S. production of good-quality tangerines and lower domestic prices have provided an incentive to sell tangerines abroad this season.

#### Fresh Use Accounted for 46 Percent of 1990/91 Temple Crop

All reported U.S. production of Temple oranges is from Florida. For the past five seasons, an average of 28 percent of production was shipped fresh. In the 1990/91 season (December through May), 46 percent of Florida's Temples went to the fresh

market, the highest proportion in the past five seasons. The shortage of fresh oranges due to the 1990 California freeze probably created more demand for fresh Temples. Florida's 1989/90 Temple crop was damaged by a freeze in December 1989, so production was off 63 percent from the prior season, and only 10 percent was marketed fresh.

In 1991/92, Temple orange production was forecast to be 117,000 short tons, an increase of 4 percent from last season. Of the past five seasons, production was highest in 1988/89 at

Table 13--Tangerines: U.S.-average equivalent on-tree price received by growers, 1989-92

Month	All tangerines				Fresh market				Processing			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
Dollars per box												
January	12.57	16.19	19.79	17.97	18.32	26.15	24.57	21.97	3.53	2.57	1.85	3.14
February	12.41	17.48	15.38	13.93	17.43	25.38	22.17	17.10	4.04	2.29	2.15	3.45
March	10.31	12.54	20.04		15.41	18.28	27.28		3.30	2.14	2.54	
April	10.15	11.40	20.24		14.33	16.36	27.39		2.83	1.48	-1.22	
May	3.78	13.32	17.65		11.46	17.26	27.09		0.34	1.48	-1.22	
June	3.37	1.48	--		11.46	--	--		0.34	1.48	--	
July	--	--	--		--	--	--		--	--	--	
August	--	--	--		--	--	--		--	--	--	
September	--	20.60	--		--	29.40	--		--	0.50	--	
October	22.01	19.11	22.04		28.29	25.80	29.40		0.54	1.74	0.50	
November	18.71	15.43	25.25		24.31	22.89	30.28		0.52	1.39	3.50	
December	15.22	16.62	15.62		21.02	24.42	19.33		1.21	2.20	3.00	

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

Table 14--Tangerines: State-average equivalent on-tree price received by growers, 1989-92

Month	Arizona				California				Florida			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
Dollars/75-lb. box				Dollars/75-lb. box				Dollars/95-lb. box				
January	16.52	17.13	19.40	16.44	15.72	22.58	20.49	15.76	10.32	12.95	19.20	18.63
February	12.03	10.64	13.87	11.27	13.00	19.50	13.01	14.07	12.07	18.89	16.62	14.77
March	7.95	9.09	20.29		9.25	13.22	20.52		11.60	9.55	19.61	
April	2.48	--	--		7.31	11.40	20.24		14.55	--	--	
May	--	--	--		3.78	13.31	17.65		--	--	--	
June	--	--	--		3.37	1.48	--		--	--	--	
July	--	--	--		--	--	--		--	--	--	
August	--	--	--		--	--	--		--	--	--	
September	--	--	--		--	--	--		--	20.60	--	
October	13.39	--	--		--	--	--		22.88	19.11	22.04	
November	12.04	12.56	18.19		21.87	20.10	33.19		19.05	14.85	24.47	
December	17.23	18.26	14.59		22.19	18.65	21.59		12.61	14.77	15.19	

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

169,000 tons. Harvest of Temples was 81 percent complete by March 1, and the 1991/92 production forecast was unchanged from the first forecast made in October 1991. According to preliminary utilization reports, fresh use was 35 percent of Temple production, compared to 32 percent at the same time last year. As of March 1, fresh utilization was up 23 percent from the year earlier, while processed use was up 6 percent.

#### 1991/92 Tangelo Crop Forecast Same as 1990/92

The March forecast of U.S. tangelo production indicated the 1991/92 crop was the same as last season, 119,000 tons, but 37 percent less than the large 1987/88 crop. The tangelo crop reported for the United States includes only Florida tangelo production because tangelos are reported with tangerines in California.

Harvest of Florida tangelos was 96 percent complete by the first of March, and the crop was 2 percent larger than anticipated at the beginning of the season. Fresh shipments accounted for 46 percent of preliminary certified use, compared to 40 percent at the same time last season. In 1990/91, 45 percent of production was utilized fresh, compared to the average of 36 percent for the last five seasons. Preliminary reports indicated 1991/92 fresh utilization was 14 percent greater than the prior year and processed use was down 11 percent.

#### Fresh Temple and Tangelo Prices Start Lower in 1992

Grower prices (on-tree-equivalent returns) of fresh Temples and tangelos have fallen since the season began, as marketings of fresh oranges and tangerines increased, and prices

generally have been lower than a year earlier. In contrast, prices for processing have been increasing this season and were above year-earlier levels.

In January, the price for fresh Temples was down about 30 percent from the prior year, but the price for processing was 68 percent higher. Prices of Temples for processing increased 6 percent between January and February 1992, while the fresh price declined 5 percent.

For all tangelos, grower prices were 5 percent lower in January 1992 than the year before. The January price for fresh tangelos was down 33 percent, but the processing price was up 55 percent compared to 1991. Since November 1991, the price for fresh tangelos has fallen 38 percent, but the processing price has climbed 11 percent.

Table 15--Florida-average equivalent on-tree price received by growers, 1989-92

Month	All tangelos				Fresh-market tangelos				Processing tangelos			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
Dollars/90-lb. box												
January	6.36	4.24	6.30	6.01	11.15	14.95	11.95	7.95	5.26	2.82	3.30	5.10
February	5.33	4.94	4.96	5.18	10.65	16.95	10.45	6.45	4.88	4.64	3.60	5.10
March	--	--	--	--	--	--	--	--	--	--	--	--
September	--	--	--	--	--	--	--	--	--	--	--	--
October	--	6.53	--	--	--	10.95	--	--	--	2.80	--	--
November	6.54	6.07	8.59	--	8.75	9.15	10.45	--	2.75	3.00	4.60	--
December	5.07	6.59	7.49	--	6.65	9.95	9.45	--	3.69	3.25	5.00	--

	All Temples				Fresh-market Temples				Processing Temples			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
Dollars/90-lb. box												
January	6.70	4.38	8.79	7.76	7.95	17.15	13.15	9.15	4.55	3.23	2.80	4.70
February	5.09	6.81	4.86	6.33	5.65	18.15	8.65	8.65	4.93	4.94	3.60	5.00
March	5.15	4.65	5.07	--	7.45	13.45	10.65	--	5.01	4.46	3.80	--
April	5.28	4.94	--	--	7.45	--	--	--	5.26	4.94	--	--
May	--	--	--	--	--	--	--	--	--	--	--	--
November	--	--	--	--	--	--	--	--	--	--	--	--
December	--	8.65	--	--	--	13.85	--	--	--	2.40	--	--

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

# Florida Grapefruit Crop Forecast Down 7 Percent From 1990/91

*Despite the smaller crop and larger good-quality fruit, consumer demand has been weak and fresh grapefruit prices have been below last season. Exports of fresh grapefruit have kept pace with last season, through December.*

U.S. grapefruit production was projected at nearly 2.2 million short tons in the 1991/92 season (September through August), and 82 percent will likely be produced in Florida. The 1991/92 Florida grapefruit crop was forecast to be 7 percent less than the 1990/91 crop. Last year, Florida accounted for 85 percent of U.S. grapefruit production, but only 77 percent in 1989/90 because of the December 1989 freeze.

In Florida, the grapefruit crop is smaller, fruit matured earlier, and the grapefruit season is ahead of last year, which means shippers will run out of fruit earlier. Preliminary utilization reports indicated that as of March 1, 1992, 23 percent of the crop remained to be harvested. On the same date last year, 42 percent of the grapefruit crop remained. The pro-

Figure 5

## All Grapefruit: Production by State

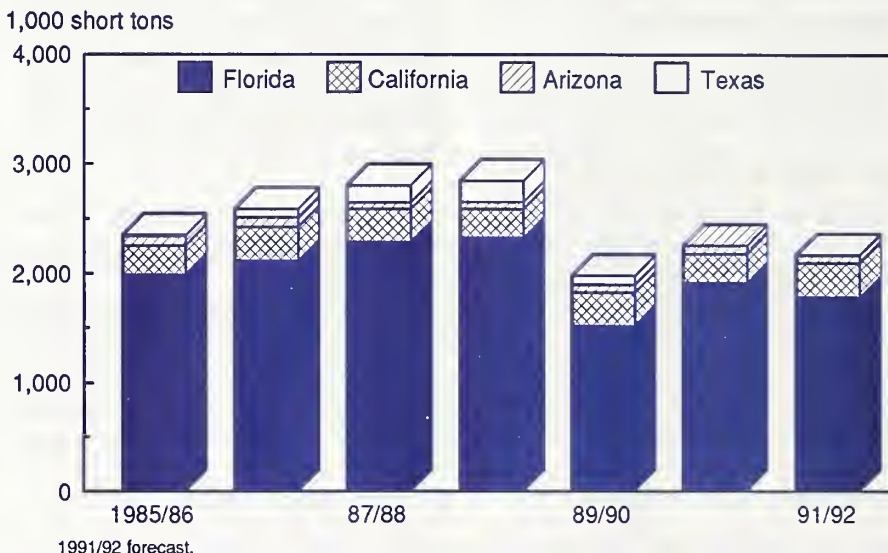


Table 16--Grapefruit: Utilized production, 1989/90-1990/91 and indicated 1991/92 1/

Crop and State	Utilized		Indicated 1991/92		Utilized		Indicated 1991/92	
	1989/90	1990/91	10-10-91	3-11-92	1989/90	1990/91	10-10-91	3-11-92
	1,000 boxes 2/				1,000 short tons			
GRAPEFRUIT:								
Florida, all	35,700	45,100	42,500	41,900	1,518	1,916	1,807	1,781
Seedless	34,300	43,500	41,000	40,500	1,458	1,848	1,743	1,721
Pink	16,300	21,800	21,000	20,500	693	926	893	871
White	18,000	21,700	20,000	20,000	765	922	850	850
Other	1,400	1,600	1,500	1,400	60	68	64	60
Arizona	2,200	2,400	2,300	2,300	70	77	74	74
California	9,400	8,000	3/	3/	310	262	3/	3/
Desert Valleys	3,500	3,500	3,500	3,500	112	112	112	112
Other areas	5,900	4,500	3/	3/	198	150	3/	3/
Texas	2,000	4/	115	65	80	4/	5	3
Total 5/					1,978	2,255	2,196	2,168

1/ The crop year begins with bloom of the first year shown and ends with completion of harvest the following year.

2/ Net pounds per box: California desert and Arizona-64, California other areas-67, Florida-85 and Texas-80.

3/ The first forecast for California grapefruit "other area" will be available as of April 1, 1992.

4/ Due to the severe freeze of December 1989, Texas had no commercial production the 1990/91 season.

5/ Total based on 1989/90 California production in other areas.

Source: National Agricultural Statistics Service, USDA.

portion of fresh use was about the same as in the last five seasons, 55 percent.

Preliminary reports of Florida shipments (from the beginning of the season through March 1, 1992) indicate fresh grapefruit shipments were up 4 percent from the same time last year. Fresh domestic shipments accounted for 59 percent and exports for 41 percent of the 32,500 cartons shipped. Last season, exports accounted for 49 percent of fresh shipments, compared to 44 percent in 1989/90 and 58 percent in 1988/89. Nearly 30 percent of Florida white seedless grapefruit, preferred by Japanese importers, remained to be harvested. So the U.S. export share of fresh shipments may increase late in the season.

### Grapefruit Exports Expand

In the early part of this season, fresh grapefruit exports kept pace with last year but will drop off and may even fall behind last year as the Florida marketing season ends. For the first 4 months of the current season (September through December 1991), U.S. grapefruit exports were 2 percent ahead of the relatively large quantity exported during the same period in 1990.

U.S. grapefruit exports were up 55 percent in 1990/91 (September through August) from the 1989/90 season. Fresh grapefruit exports were 511,400 short tons in 1990/91 and accounted for 23 percent of U.S. production, compared to 16 percent in 1989/90. For the first 6 months of the 1991/92 season, exports of Florida grapefruit accounted for 23 percent of the utilized crop. More than half of U.S. fresh grapefruit exports in 1990/91 went to Japan (52 percent), 26 percent went to Europe, and Canada accounted for 17 percent.

### Fresh Grapefruit Price Down, but Processing Price Gains

Despite the reduced crop, consumer demand has been weak, and fresh grapefruit prices have been below last season. U.S. grower prices (on-tree-equivalent returns) for fresh grapefruit were 5 percent lower in October 1991 than October 1990. The February 1992 price was 12 percent below a year earlier. Fresh grapefruit prices in Arizona, California, and Florida have been lower than last year every month this season except December.

In contrast, grower prices for Florida processing grapefruit have been higher than the past two seasons. The February 1992 price for processing grapefruit was up 74 percent from November 1991. Demand for processing grapefruit has been strong, as processors reported low carry-over stocks of frozen concentrate grapefruit juice.

### Grapefruit Juice Inventory Down

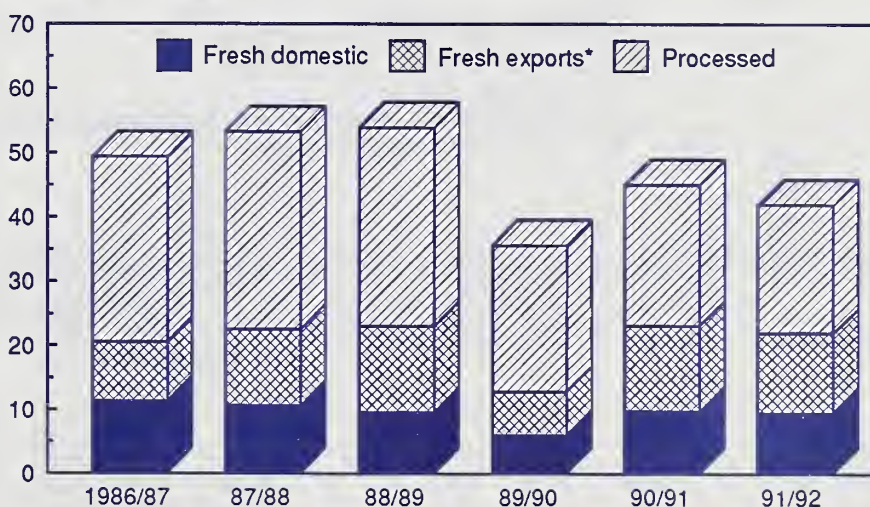
According to Florida processors' reports, nearly 80 percent of the grapefruit processed during the first 10 weeks of the season was used for frozen concentrate grapefruit juice (FCGJ), 3 percent for canned single-strength juice, and the remainder for chilled product. The amount of Florida FCGJ on hand at the end of the 10th processing week was 25 percent less than at the same time last season.

Carry-over of FCGJ, as of November 30, 1991, was 8 million 40-degree-Brix gallons, 35 percent less than the previous year. By February 15, 1992 (10th week of the season), the total pack was 11 million gallons, nearly the same as last season. However, movement was up 12 percent from the same time last year, leaving product-on-hand at 15 million 40-degree-Brix gallons.

Figure 6

### Florida Grapefruit Production and Use

Million 85-lb. boxes



\*Includes Canada. 1991/92 forecast.

Table 17--Fresh grapefruit shipments, Florida, 1986/87 through 1991/92

Item	Season 1/					
	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92 2/
	1,000 cartons 3/					
Domestic	22,764	21,337	19,482	14,276	23,467	22,600
Export	18,412	23,861	26,881	11,434	22,969	21,400
Canada	2,940	3,191	3,313	2,106	3,616	3,400
Europe 4/	6,231	8,447	8,840	3,904	7,423	7,500
Far East	9,241	12,223	14,728	5,424	11,930	10,500
Total	41,176	45,198	46,363	25,710	46,436	44,000

1/ Seasons are August 1 through July 31.

2/ Forecast, January 1992.

3/ Florida shipping cartons weight approximately 42.5 pounds.

4/ Includes some offshore exports not destined for Europe.

Source: Florida Department of Citrus.

Table 18--Grapefruit used for frozen concentrate, Florida, 1984/85-1991/92

Season	Production	Used for frozen concentrate		Yield per box
		Million boxes 1/	Percent	
				Gallons 2/
1984/85	44.0	23.0	52.3	1.08
1985/86	46.8	21.6	46.2	1.12
1986/87	49.8	24.1	48.4	1.20
1987/88	53.8	26.7	49.6	1.20
1988/89	54.8	26.6	48.5	1.21
1989/90	35.7	19.4	54.3	1.12
1990/91	45.1	17.4	38.6	1.24
1991/92 3/	42.0	15.8	37.6	1.19

1/ Picking boxes weight approximately 85 pounds.

2/ Gallons per box at 40 degrees Brix equivalent.

3/ Forecast, January 1992.

Sources: National Agricultural Statistics Service, USDA, Florida Citrus Processors Association, and the Florida Department of Citrus.

Table 19--Grapefruit: U.S.-average equivalent on-tree price received by growers, 1989-92

Month	All grapefruit				Fresh grapefruit				Processing grapefruit			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
	Dollars per box											
January	4.40	5.03	5.45	5.92	5.39	10.81	9.01	7.58	3.13	2.83	1.56	3.96
February	4.00	5.00	4.64	5.68	5.11	11.91	8.61	7.58	3.24	3.07	2.14	4.63
March	3.83	7.02	5.67		5.09	13.15	9.58		3.26	3.58	1.88	
April	4.24	7.37	5.25		5.75	12.34	9.27		2.75	1.53	0.09	
May	4.29	7.48	4.18		6.13	13.83	7.92		2.01	-0.69	-0.54	
June	3.32	7.95	5.22		6.12	13.54	9.48		-1.35	-0.91	-1.95	
July	5.44	5.63	3.94		8.68	10.02	7.84		-1.44	-0.52	-1.94	
August	6.26	3.17	2.86		10.06	7.15	6.55		-1.54	-1.74	-2.00	
September	7.61	5.73	1.38		10.03	7.75	4.55		-0.59	-0.83	-1.98	
October	6.09	6.52	6.24		7.74	8.44	8.00		1.74	0.76	0.40	
November	5.94	6.03	6.16		7.63	8.14	7.67		2.02	1.23	2.66	
December	6.57	5.17	6.31		9.15	7.38	8.09		2.23	1.75	2.96	

Source: National Agricultural Statistics Service, USDA.

Table 20--Fresh grapefruit: State-average equivalent on-tree price received by growers, 1989-92

Month	Arizona				California				Texas			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
	Dollars/64-lb. box				Dollars/64- or 67-lb. box				Dollars/80-lb. box			
January	2.20	7.45	5.57	3.75	5.20	10.00	7.89	5.57	3.95	3.55	--	14.00
February	1.74	8.85	6.38	4.15	2.47	8.07	5.17	4.60	3.02	--	--	--
March	2.63	10.82	7.29		2.58	8.85	5.53		1.98	--	--	
April	2.49	8.98	4.93		2.96	7.60	4.99		2.34	--	--	
May	2.70	6.55	4.27		2.85	7.74	4.06		3.18	--	--	
June	2.42	3.24	4.35		3.58	8.04	5.43		--	--	--	
July	-0.96	--	--		5.52	5.63	3.94		--	--	--	
August	--	--	--		6.26	3.17	4.17		--	--	--	
September	10.75	--	--		7.43	0.58	1.38		--	--	--	
October	5.58	3.34	--		6.76	1.06	0.35		7.88	--	--	
November	3.55	4.56	3.05		7.19	5.51	3.03		7.13	--	12.80	
December	3.81	4.23	3.65		5.97	7.31	10.46		5.39	--	14.00	

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

Table 21--Grapefruit: Florida-average equivalent on-tree price received by growers, 1989-92

Month	All				Fresh market				Processing			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
	Dollars/85-lb. box											
January	4.47	4.87	5.39	5.90	5.56	10.98	9.02	7.64	3.33	2.89	1.59	3.97
February	4.14	4.84	4.63	5.71	5.43	12.19	8.71	7.70	3.39	3.12	2.18	4.64
March	4.00	6.57	5.65		5.53	13.42	9.82		3.40	3.85	2.02	
April	4.45	6.04	5.32		5.97	9.77	9.52		3.10	4.50	0.49	
May	4.69	--	4.21		6.31	--	7.55		2.83	--	0.51	
June	--	--	--		--	--	--		--	--	--	
July	--	--	--		--	--	--		--	--	--	
August	--	--	--		--	--	--		--	--	--	
September	7.54	7.66	--		8.80	9.15	--		0.80	0.21	--	
October	6.01	6.93	6.75		7.76	8.99	8.35		1.79	0.92	0.83	
November	5.68	6.08	6.21		7.56	8.32	7.79		2.19	1.30	2.66	
December	6.90	5.15	6.29		10.04	7.40	8.18		2.47	1.80	2.96	

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

## Lemon Crop Down 5 Percent, but 9 Percent More Limes

*The California lemon crop was forecast down 9 percent, and Arizona production up 12 percent from 1990/91. Lemon prices dropped to one-third of the September 1991 peak, and lime prices continued below a year earlier.*

The 1991/92 U.S. lemon crop is expected to be down 5 percent from last season. California will likely see a decline of 9 percent as a result of the December 1990 freeze that also brought 1990/91 production down 6 percent from the prior year. Arizona's 1991/92 lemon crop is expected to be up 12 percent from the 1990/91 crop.

The 1990/91 season (August through July) was not one of the best for California and Arizona lemon producers. Unusually low temperatures during February 1990 were followed by extremely high June temperatures, and then by freezing temperatures in late December 1990. The December freeze did varying amounts of tree damage in all three lemon-producing areas, damaging the remaining 1990/91 lemon crop as well as the developing 1991/92 crop. Prorates (restrictions of weekly shipment volume under the California Lemon Marketing Order) were suspended in mid-January 1991 and have not been reinstated.

According to lemon industry reports, utilization has been about the same as last season, with 44 percent used for fresh domestic shipments, 18 percent for fresh exports, and 38 percent for processing and other uses. The harvest was behind last season, with only 48 percent of the 1991/92 California-Arizona crop harvested by February 8, compared to 60 percent the year earlier.

Fresh domestic shipments through February 8, 1992, were 94 percent of the year-earlier shipments, but exports were only 87 percent of the previous year's. Processed and other uses were only 63 percent of last season's levels. A higher proportion of last year's California lemons were processed in January 1991 because, after the freeze, some fruit that was not suitable for fresh marketing was salvaged for processing.

### Lemon Prices Down Sharply in 1992

Grower prices (on-tree-equivalent returns) for fresh lemons rose last

year, and the marketing-year-average price was \$20.16 a box in 1990/91, up 11 percent from 1989/90. The freeze not only reduced the size of the crop, but caused more fruit to be diverted to processing. The volume of lemons picked was at a 5-year low between January and April 1991, and again in June and July 1991. The California fresh lemon price was the highest in June and Arizona's price peaked in September. The U.S. grower price for fresh lemons, has been dropping, and in February 1992 was about half as much as in February 1991.

F.o.b. prices for California-Arizona lemons averaged \$13.10 per 38-pound carton (size 140) in December 1991, 15 percent less than in December 1990. After averaging nearly \$21 per carton in January 1991 following the freeze, f.o.b. prices were down 45 percent, averaging \$11.56 per carton in January 1992. In February, prices were down 40 percent from a year before. Lemon prices will rise seasonally through July, but will still be below year-earlier levels.

Table 22--Lemons and limes: Utilized production, 1989/90-1990/91 and indicated 1991/92 1/

Crop and State	Utilized		Indicated 1991/92		Utilized		Indicated 1991/92	
	1989/90	1990/91	10-10-91	3-11-92	1989/90	1990/91	10-10-91	3-11-92
	1,000 boxes 2/				1,000 short tons			
LEMONS:								
Arizona	2,800	4,100	4,600	4,600	106	156	175	175
California	15,800	14,900	13,500	13,500	600	566	513	513
Total	18,600	19,000	18,100	18,100	706	722	688	688
LIMES:								
Florida	1,650	1,450	1,600	1,600	73	64	70	70

1/ The crop year begins with bloom of the first year shown and ends with completion of harvest the following year.

2/ Net pounds per box: lemons-76 and limes-88.

Source: National Agricultural Statistics Service, USDA.

## Lemon Exports Drop and Imports Increase

In 1990/91 (August through July), U.S. fresh lemon exports were down 18 percent from the prior season. In 1989/90 and 1990/91, exports accounted for about 20 percent of lemon production. Japan received about 75 percent of U.S. lemon exports in both years.

U.S. imports of fresh lemons increased 4 percent in 1990/91, from 11,600 short tons in 1989/90. The Bahamas provided 73 percent and Chile 17 percent of U.S. lemon imports in 1990/91.

## Larger Lime Crop Forecast

Commercial lime production in Florida is expected to be 70,000 short tons, up 9 percent from 1990/91 (April through December). Since 1980/81, Florida lime production has fluctuated between 53,000 tons and the high of 76,000 tons in 1985/86.

U.S. lime imports nearly equalled production in 1990/91, a 35-percent increase from 1989/90. Mexico supplied 95 percent of U.S. lime imports both seasons. Between April and December 1991, imports from Mexico were up 35 percent from the same period the year before. The United States has been a major market for Mexico's Persian limes. When U.S. restrictions on Key lime imports are lifted, Mexican lime exports could increase, if there is adequate consumer demand.

During 1991, grower prices (on-tree-equivalent returns) for fresh limes were lower than in the corresponding months of 1990, except for March and July. January and February 1992 prices were about \$11 per box less than in the same period last season. Weekly f.o.b. prices for Persian limes shipped from Florida averaged \$5.50 per carton from December 1991 until mid-February 1992, 20-30 percent less than the year before. F.o.b. prices of Mexican limes shipped through southern Texas were down 10-20 percent in the same period.

Figure 7

## California-Arizona Lemon Movement

Million 38-lb. cartons

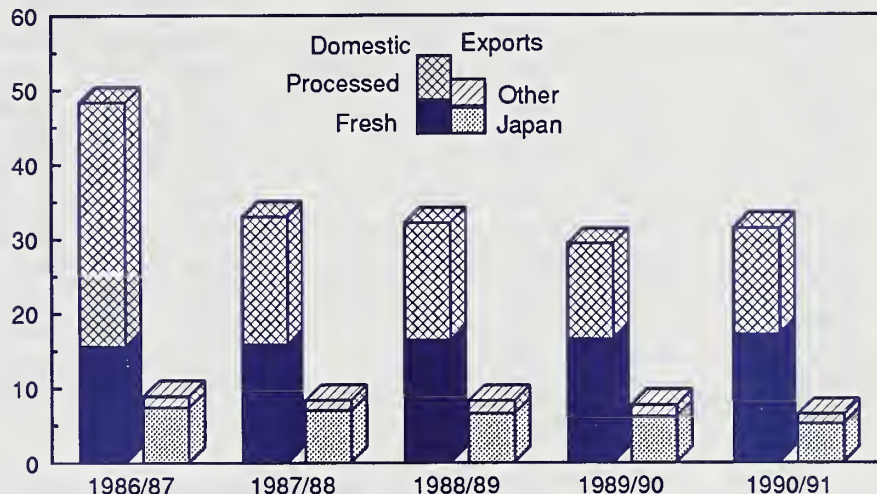


Figure 8

## Florida Limes: Production and Season-Average Grower Price

Million 88-lb. boxes

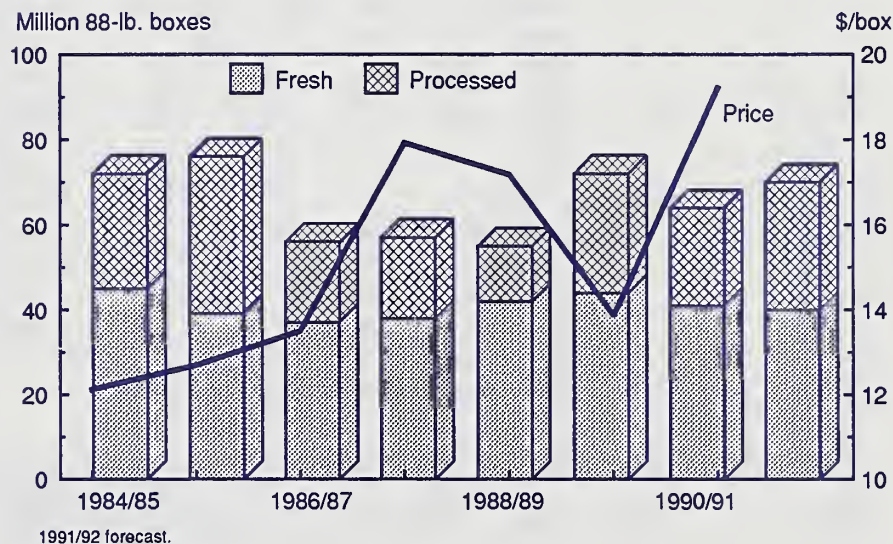


Table 23--Lemons: U.S.-average equivalent on-tree price received by growers, 1989-92

Month	All lemons				Fresh market				Processing			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
Dollars/per 76-lb. box												
January	4.33	8.67	7.55	4.89	9.43	12.83	24.79	10.44	-0.96	0.24	-1.01	-1.37
February	4.75	9.89	10.71	3.59	10.56	15.42	19.24	9.96	-0.96	0.38	-1.01	-1.29
March	5.87	10.24	14.91		12.28	17.03	19.58		-0.92	0.44	-1.01	
April	8.03	11.19	18.07		13.47	17.53	22.05		-0.90	0.44	-1.01	
May	11.96	12.20	21.13		16.17	18.13	26.05		-0.88	0.44	-1.01	
June	14.95	13.24	22.29		18.77	19.33	27.95		-0.88	0.44	-1.01	
July	15.57	13.40	20.27		20.17	20.03	29.25		-0.88	0.52	-1.01	
August	16.70	11.70	20.51		21.73	18.05	30.45		-0.72	0.51	-1.01	
September	17.22	13.53	22.00		22.76	19.18	31.35		-0.72	0.57	-0.95	
October	15.11	11.49	19.45		22.00	18.06	26.33		-0.72	0.57	-0.95	
November	9.71	4.46	12.75		15.97	7.68	20.61		-0.46	0.23	-1.01	
December	7.17	3.63	5.40		12.43	8.55	13.75		-0.04	-0.67	-1.43	

Source: National Agricultural Statistics Service, USDA.

Table 24--Lemons: State-average equivalent on-tree price received by growers, 1989-92

Month	Arizona				California			
	1989	1990	1991	1992	1989	1990	1991	1992
Dollars/76-lb. box								
January	3.10	6.59	11.02	4.19	4.80	9.38	6.22	6.51
February	1.66	6.21	9.10	1.89	5.10	10.16	11.66	6.32
March	4.56	--	12.95		5.89	10.24	14.98	
April	--	--	--		8.03	11.19	18.07	
May	--	--	--		11.96	12.20	21.13	
June	--	--	--		14.95	13.24	22.29	
July	--	--	--		15.57	13.40	20.27	
August	--	--	--		16.70	11.70	20.51	
September	18.89	15.93	26.71		16.71	12.68	21.61	
October	16.72	13.09	19.04		14.10	10.49	19.71	
November	10.22	5.85	10.55		9.25	2.73	14.44	
December	6.65	3.90	4.56		7.64	3.42	7.66	

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

Table 25--Limes: Florida-average equivalent on-tree price received by growers, 1989-92

Month	All limes				Fresh-market limes				Processing limes			
	1989	1990	1991	1992	1989	1990	1991	1992	1989	1990	1991	1992
Dollars/88-lb. box												
January	47.80	40.80	21.05	17.00	47.80	40.80	32.90	21.90	--	--	-2.65	-2.60
February	44.80	68.80	31.69	25.92	44.80	68.80	44.90	33.90	--	--	-2.65	-2.80
March	32.80	49.80	40.69		32.80	49.80	55.90		--	--	-2.65	
April	8.80	41.50	39.50		8.80	41.50	39.50		--	--	--	
May	5.80	28.50	6.75		5.80	28.50	7.90		--	--	-2.60	
June	0.80	3.01	-1.26		0.80	4.40	-0.10		--	0.55	-2.60	
July	0.29	1.47	0.74		0.90	2.40	3.90		-0.95	-0.40	-1.70	
August	1.15	8.54	5.12		5.90	16.90	10.90		-2.00	-0.90	-1.70	
September	4.33	9.20	11.45		17.90	19.90	16.90		-2.05	-0.90	-2.60	
October	6.24	12.55	13.24		20.90	23.90	18.90		-2.65	-2.65	-2.60	
November	5.69	11.53	13.31		14.90	24.90	17.90		-2.65	-2.65	-2.60	
December	28.80	20.35	16.61		28.80	32.90	23.90		--	-2.65	-2.60	

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

Table 26--Selected citrus all prices, packinghouse-door returns, by month, 1989-92

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Dollars per box												
<b>Oranges:</b>												
<b>Arizona</b>												
1989	7.95	6.98	9.11	5.69	5.78	8.11	8.00	--	--	--	11.87	9.74
1990	10.58	10.49	8.74	7.79	7.89	6.70	4.19	--	--	--	12.78	11.48
1991	19.85	16.60	22.87	17.56	21.88	8.97	--	--	--	--	22.51	12.33
1992	12.82	9.02										
<b>Florida</b>												
1989	8.53	8.76	8.90	9.79	10.68	11.12	--	--	--	--	8.64	8.06
1990	7.67	7.54	8.11	9.16	8.95	--	--	--	--	7.93	7.72	7.66
1991	8.12	8.46	8.87	9.13	9.16	--	--	--	--	10.63	6.70	6.99
1992	7.36	8.20										
<b>California</b>												
1989	7.07	6.16	6.58	6.93	8.26	8.45	9.08	8.32	8.34	8.02	9.68	8.76
1990	8.40	7.97	7.27	6.93	8.72	8.65	7.84	6.47	6.56	5.77	11.96	11.56
1991	8.20	9.11	14.85	19.83	23.27	22.02	20.62	21.47	23.85	25.11	25.14	13.91
1992	12.89	9.74										
<b>Texas</b>												
1989	7.25	7.11	6.59	6.42	4.46	--	--	--	--	10.15	9.65	6.48
1990	5.07	3.53	--	--	--	--	--	--	--	--	--	--
1991	--	--	--	--	--	--	--	--	--	--	14.70	15.57
1992	14.87	--										
<b>Grapefruit:</b>												
<b>Arizona</b>												
1989	3.86	3.40	4.29	4.15	4.36	4.08	0.07	--	12.48	7.30	5.28	5.54
1990	9.18	10.58	12.55	10.71	8.28	4.97	--	--	--	5.18	6.29	5.96
1991	7.30	8.10	9.02	6.66	6.00	6.08	--	--	--	--	4.78	5.38
1992	5.25	5.54										
<b>Florida</b>												
1989	6.09	5.76	5.63	6.07	6.32	--	--	--	9.16	7.63	7.30	8.52
1990	6.51	6.49	8.22	7.68	--	--	--	--	9.27	8.55	7.70	6.78
1991	7.02	6.26	7.29	6.95	5.84	--	--	--	--	8.36	7.82	7.90
1992	7.52	7.32										
<b>California</b>												
1989	6.86	4.13	4.24	4.62	4.51	5.24	7.18	7.92	9.09	8.42	8.92	7.70
1990	11.73	9.80	10.58	9.33	9.47	9.77	7.36	4.90	2.31	2.79	7.24	9.04
1991	9.62	6.90	7.26	6.72	5.79	7.16	5.67	4.59	3.11	2.08	4.76	12.19
1992	6.98	5.48										
<b>Texas</b>												
1989	4.96	4.06	3.03	3.39	4.16	--	--	--	--	8.98	8.22	6.47
1990	4.59	--	--	--	--	--	--	--	--	--	--	--
1991	--	--	--	--	--	--	--	--	--	--	14.40	14.98
1992	14.98	--										
<b>Lemons:</b>												
<b>Arizona</b>												
1989	6.11	4.67	7.57	--	--	--	--	--	21.91	19.74	13.24	9.67
1990	9.61	9.23	--	--	--	--	--	--	18.96	16.12	8.88	6.93
1991	14.05	12.13	15.98	--	--	--	--	--	29.74	22.07	13.58	7.59
1992	7.22	4.92										
<b>California</b>												
1989	7.81	8.11	8.90	11.04	14.97	17.96	18.58	19.72	19.73	17.12	12.27	10.66
1990	12.40	13.18	13.26	14.21	15.22	16.26	16.42	14.73	15.71	13.52	5.76	6.45
1991	9.25	14.69	18.01	21.10	24.16	25.32	23.30	23.54	24.64	22.74	17.47	10.69
1992	9.54	9.35										
<b>Tangerines:</b>												
<b>Arizona</b>												
1989	18.32	13.83	9.75	4.28	--	--	--	--	--	15.24	13.89	19.08
1990	18.98	12.49	10.94	--	--	--	--	--	--	--	14.44	20.14
1991	21.28	15.75	22.17	--	--	--	--	--	--	--	20.07	16.47
1992	18.41	13.24										
<b>Florida</b>												
1989	13.05	14.76	14.28	17.21	--	--	--	--	--	25.57	21.74	15.35
1990	15.82	21.68	12.48	--	--	--	--	--	23.33	21.82	17.61	17.60
1991	21.94	19.35	22.34	--	--	--	--	--	--	24.75	27.15	17.90
1992	21.33	17.48										
<b>California</b>												
1989	17.52	14.80	11.05	9.11	5.58	5.17	--	--	--	--	23.72	24.04
1990	24.43	21.35	15.07	13.25	15.16	3.33	--	--	--	--	21.98	20.53
1991	22.37	14.89	22.40	22.12	19.53	--	--	--	--	--	35.07	23.47
1992	17.73	16.04										

-- = Insufficient marketing to establish price.

Source: National Agricultural Statistics Service, USDA.

## Noncitrus Production Down Slightly in 1991

*Utilized production of noncitrus fruit declined less than 1 percent in 1991, but total value jumped 3 percent.*

Utilized production of major noncitrus fruit crops, including strawberries, was 15.5 million short tons in 1991, down slightly from 15.7 in 1990. Larger crops of apples, sweet cherries, cranberries, peaches, and prunes were produced, while production of other noncitrus fruit declined, inclu-

ding apricots, tart cherries, figs, grapes, nectarines, and pears.

Although damage from scattered frosts, dry summer weather, and a hurricane reduced New England's apple crop, larger crops in the central and remaining eastern States offset a

smaller crop in the West. U.S. sweet cherry production increased 8 percent, but freezing spring temperatures and poor weather for pollination cut the 1991 Michigan tart cherry crop by one-third.

Table 27--Utilized production and value of noncitrus fruit, by types, United States, 1989-91

Crop	Utilized production			Value of utilized production		
	1989	1990	1991	1989	1990	1991
	1,000 short tons			1,000 dollars		
Apples	4,958.7	4,829.1	4,905.2	1,034,437	1,456,896	1,754,020
Apricots	119.0	120.4	91.8	40,222	40,937	37,356
Avocados	139.1	156.1	1/	250,940	206,931	1/
Bananas	6.0	5.7	5.4	4,344	4,294	4,494
Cherries, sweet	190.9	132.4	143.4	136,125	118,319	137,659
Cherries, tart	121.5	101.5	94.9	35,348	36,685	1/
Cranberries	187.4	169.6	208.9	164,720	156,365	2/
Dates	22.0	24.0	24.0	22,880	20,880	26,880
Figs, California	48.0	48.7	37.0	18,341	17,273	1/
Grapes	5,930.1	5,659.8	5,450.3	1,862,888	1,670,468	1,614,935
Guavas	10.3	11.1	1/	3,090	3,320	1/
Kiwifruit, California	37.0	34.0	27.5	14,800	14,110	1/
Nectarines, California	220.0	232.0	205.0	87,645	109,999	82,369
Olives, California	123.0	131.5	65.0	57,458	64,309	41,143
Papayas	37.0	34.3	27.0	14,380	14,805	16,465
Peaches	1,114.9	1,069.8	1,245.9	364,867	371,626	392,682
Pears	916.5	963.7	908.4	253,602	269,541	277,968
Pineapples	580.0	575.0	555.0	98,310	106,365	107,775
Pomegranates 3/	18.0	--	--	4,906	--	--
Plums, California	216.0	223.0	218.0	96,146	134,412	97,894
Prunes, California	754.8	463.1	567.0	176,054	128,331	1/
Plums & prunes 4/	43.9	43.2	24.8	9,079	8,444	7,084
Strawberries	571.0	627.2	700.3	537,756	580,101	661,822
Total 5/	16,365.1	15,655.2	15,504.8	5,288,338	5,534,411	5,260,546

-- = Not available.

1/ Data available July 7, 1992. 2/ Data available August 18, 1992. 3/ Discontinued after the 1989 crop. 4/ Idaho, Michigan, Oregon, and Washington.

5/ Total in 1991 omits crops for which data was not available.

Source: National Agricultural Statistics Service, USDA.

The 1991 cranberry crop of 208,900 short tons was the largest on record, up 23 percent from 1990 and up 2 percent from the 1988 record. In Massachusetts, where almost half of the U.S. cranberry crop is grown, 1991 cranberry production exceeded the previous year's by 54 percent. The larger crop reflected an average-to-heavy bloom and excellent pollinating weather that resulted in a heavy fruit set.

The 1991 value of utilized production of major noncitrus crops (excluding avocados, tart cherries, cranberries, figs, guavas, kiwifruit, and California prunes for which data were not yet

available) was \$5.26 billion, compared with \$5.10 billion in 1990. Increases in the crop values of apples (up 20 percent), peaches (up 6 percent), and pears (up 3 percent) more than offset crop value declines for other noncitrus fruits. The value of the grape crop declined 3 percent, the California nectarine crop value dropped 25 percent, the value of the California olive crop was down 36 percent, and the value of the California plum crop dropped 27 percent.

Most major noncitrus-producing regions of the country experienced a relatively mild winter, with no weather-related damage to 1992 noncitrus

crops. However, the critical blossom period in the spring will have a significant impact on this year's crop.

Winter rains, especially heavy in February, partially replenished the water supply in California. Precipitation during February 9-15, 1992, averaged more than 5 inches over northern California's mountains and major reservoirs. The Sierra Nevada snowpack improved to 74 percent of normal by February 18, up from 45 percent on February 1. Despite the recent precipitation, most of California's fruit-growing region was still considered to be in a drought (now in its sixth year).

Table 28--U.S.-average monthly prices received by growers, 1989-92

Month	Fresh apples				Fresh pears			
	1989	1990	1991	1992	1989	1990	1991	1992
Cents per pound								
January	18.1	12.2	20.0	24.9	16.8	15.2	17.3	19.2
February	17.9	12.4	20.3	24.9	18.1	17.3	18.9	17.4
March	16.5	12.3	20.2		18.4	17.9	19.5	
April	14.4	12.0	20.2		17.5	18.5	20.1	
May	13.5	12.6	22.5		19.9	21.9	24.7	
June	10.8	13.7	23.2		24.6	29.5	39.7	
July	11.5	20.3	24.6		18.8	20.5	--	
August	15.9	22.3	24.4		14.8	13.7	20.0	
September	16.7	22.2	29.1		16.6	19.3	23.9	
October	14.3	19.3	24.9		17.4	16.8	20.6	
November	13.3	19.6	25.3		15.0	17.2	20.1	
December	12.1	20.8	25.7		14.3	16.7	20.1	
	Fresh peaches				Fresh strawberries			
	1989	1990	1991	1992	1989	1990	1991	1992
Cents per pound								
January	--	--	--	--	83.0	115.0	93.0	109.0
February	--	--	--	--	93.8	83.1	94.3	86.3
March	--	--	--		68.2	73.9	63.5	
April	--	--	--		44.8	50.3	59.6	
May	26.7	29.1	28.9		35.0	35.2	50.0	
June	21.9	24.4	23.6		55.9	46.9	36.4	
July	19.5	27.1	16.4		31.1	40.7	46.3	
August	22.2	24.8	16.4		35.0	50.0	35.0	
September	26.5	24.4	22.7		65.0	55.0	35.0	
October	--	--	--		95.0	75.0	55.0	
November	--	--	--		165.0	96.3	110.0	
December	--	--	--		116.0	89.8	97.9	

-- = Not available.

Source: National Agricultural Statistics Service, USDA.

## Strong Apple Prices Continue in 1992

*Domestic and export demand keep apple prices above last year's. Value of production for 1991/92 is expected to be up 20 percent.*

Although 1991 U.S. apple production was up only 2 percent from 1990 and down less than 1 percent from the 5-year average, the total value of utilized apple production was forecast up 20 percent from 1990, almost 35 percent greater than the 5-year average. In Washington, where winter damage reduced production about 10 percent, value of production for the 1991/92 season was forecast to increase 19 percent. This followed an excellent 1990/91 season when the State's value of production jumped 68 percent above the 1989/90 level.

The U.S.-average grower price for fresh apples in January was almost 38 percent higher than the 5-year average of 18 cents per pound. Strong domestic and export demand held the fresh-apple price at 25 cents a pound in February 1992, nearly 5 cents higher than in February 1991, and double the 1990 price. The U.S.-average retail price for Red Delicious apples was 87.6 cents a pound in January, up 6.6 cents from January 1991. Lower 1991 production in the Western States (down about 9 percent) was also a factor in higher fresh-market retail prices.

The short 1991 European apple crop, combined with improved market access in several other countries, caused U.S. apple exports to rise to 263,967 metric tons for the last 6 months of 1991, up 26 percent from previous year. In the same period, fresh-apple exports to the European Community more than doubled to 45,207 metric tons, while exports to Canada were 33,261 metric tons, down 8 percent. Exports to other countries, including Hong Kong, Thailand, Indonesia, Mexico, Venezuela, and Saudi Arabia, also increased.

Wholesale processed-apple prices have been strong all season, with the

February 1992 applesauce price increasing 5 to 10 percent from January 1992. Wholesale prices for apple juice concentrate were up about 20 percent in February 1992 compared to June 1991. The smaller Agentinean and European apple crops, harvested in 1991, reduced U.S. juice imports, tightened the U.S. supply, and drove up prices. Higher U.S. prices also increased fresh-apple imports to the United States during the last 6 months of 1991 to 44,417 metric tons, up from 35,259 metric tons for the same period in 1990.

According to the International Apple Institute, U.S. fresh apple stocks on March 1, 1992, were 3 percent above a year earlier. As of February 29, 1992, total fresh-apple shipments were behind last year because of the later harvest, but weekly fresh-apple shipments were very brisk, up about 10 percent from the same week last year. Strong domestic and export demand will support fresh and processed apple prices for the remainder of the marketing season.

Figure 9

### U.S. Fresh Apples Price

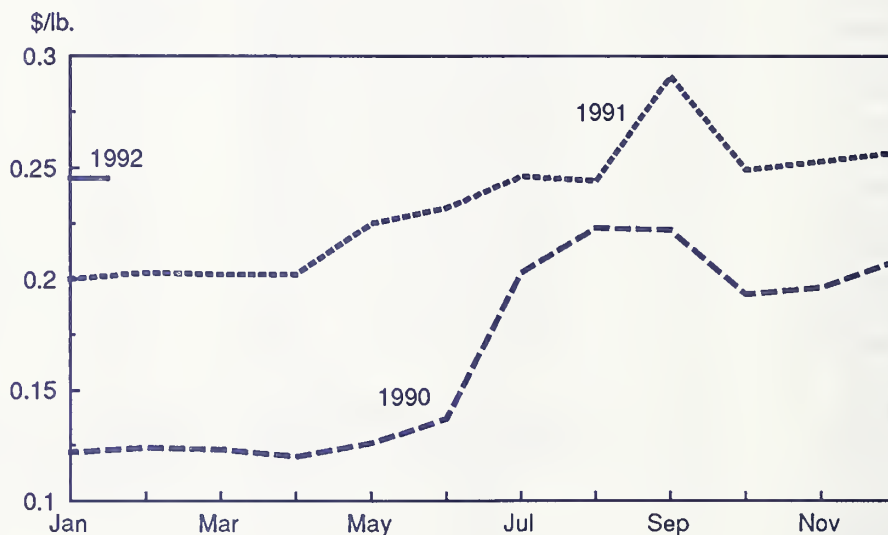


Table 29--Total U.S. fresh apple holdings, March 1

Year	East and Midwest	West 1/ Million pounds	Total
1987	340.3	1,025.7	1,366.0
1988	418.7	1,383.0	1,801.6
1989	379.3	1,276.9	1,656.2
1990	312.1	1,635.3	1,947.4
1991	242.1	1,419.1	1,661.2
1992	272.1	1,445.4	1,717.5

1/ West includes California, Colorado, Idaho, New Mexico, Oregon, Utah, and Washington.

Source: International Apple Institute.

Table 30--Apples, commercial crop: Total production and season-average prices received by growers, 1989, 1990, and indicated 1991 production

	Production			Price per pound		
State and area	1989	1990	1991	1989	1990	1991
	Million pounds			Dollars		
Eastern States:						
Connecticut	24.0	33.0	27.0	0.243	0.264	0.278
Delaware	15.0	17.0	25.0	0.113	0.116	0.137
Georgia	25.0	22.0	32.0	0.140	0.132	0.145
Maine	69.0	88.0	84.0	0.211	0.224	0.217
Maryland	37.0	33.0	75.0	0.112	0.137	0.154
Massachusetts	78.0	85.0	77.0	0.218	0.239	0.246
New Hampshire	41.0	48.0	47.0	0.231	0.242	0.257
New Jersey	48.0	60.0	100.0	0.153	0.130	0.169
New York	960.0	990.0	1,050.0	0.104	0.129	0.128
North Carolina	220.0	230.0	260.0	0.088	0.100	0.092
Pennsylvania	320.0	450.0	530.0	0.107	0.142	0.107
Rhode Island	5.5	6.0	5.0	0.244	0.258	0.271
South Carolina	35.0	34.0	45.0	0.120	0.127	0.100
Vermont	45.0	43.0	48.0	0.192	0.213	0.190
Virginia	325.0	210.0	420.0	0.102	0.101	0.116
West Virginia	115.0	150.0	190.0	0.098	0.096	0.107
Total	2,362.5	2,499.0	3,015.0			
Central States:						
Arkansas	9.0	12.0	10.0	0.188	0.191	0.169
Illinois	91.0	60.0	69.0	0.130	0.175	0.185
Indiana	64.0	57.0	60.0	0.187	0.200	0.233
Iowa	11.5	9.5	8.0	0.208	0.221	0.292
Kansas	13.0	8.0	11.0	0.209	0.215	0.255
Kentucky	16.0	9.0	20.0	0.180	0.205	0.221
Michigan	950.0	750.0	880.0	0.082	0.103	0.118
Minnesota	31.0	20.0	25.4	0.278	0.374	0.452
Missouri	55.0	41.0	40.0	0.136	0.169	0.208
Ohio	125.0	120.0	120.0	0.179	0.174	0.220
Tennessee	11.5	8.5	13.0	0.148	0.179	0.176
Wisconsin	65.0	48.0	60.0	0.156	0.250	0.213
Total	1,442.0	1,143.0	1,316.4			
Western States:						
Arizona	34.0	64.0	57.0	0.074	0.080	0.134
California	675.0	780.0	800.0	0.150	0.156	0.204
Colorado	70.0	35.0	75.0	0.096	0.147	0.139
Idaho	158.0	165.0	120.0	0.079	0.135	0.205
New Mexico	5.3	6.8	2.3	0.200	0.179	0.290
Oregon	160.0	180.0	130.0	0.050	0.112	0.151
Utah	56.0	24.0	55.0	0.120	0.188	0.200
Washington	5,000.0	4,800.0	4,300.0	0.093	0.164	0.217
Total	6,158.3	6,054.8	5,539.3			
United States	9,962.8	9,696.8	9,870.7	0.104	0.151	0.179

Source: National Agricultural Statistics Service, USDA.

## 1991 Pear Production Down From Record High in 1990

*U.S. pear production in 1991 was down 6 percent from the 1990 record. Strong domestic and export movement brought grower prices for fresh pears up about 15 percent from last year.*

U.S. pear production totaled 908,350 short tons in 1991, down 6 percent from the record set in 1990, but down less than 1 percent from the 5-year average. Freezes in the Pacific Coast region last year reduced California pear production 5 percent. Oregon's pear production was down 6 percent, and Washington's was reduced 9 percent from 1990. Production increased in several other pear-producing states: Colorado, Connecticut, Michigan, and Pennsylvania. The U.S. Bartlett pear crop dropped about 8 percent from a record high in 1990. Production of other-than-Bartlett pears also declined, 4 percent.

Strong domestic and export demand has moved the 1991 crop and maintained grower fresh-pear prices about 15 percent higher than last year. The preliminary 1991/92 grower price for all pears was \$306 per short ton, up from \$280 per ton in 1990/91. The preliminary 1991/92 pear processing

price was \$216 per ton, up 5 percent from 1990/91. In early January 1992, wholesale prices of canned pears and fruit cocktail were about 15 percent higher than they had been before the 1991 harvest. In February 1992, grower prices for fresh pears declined to \$347 per ton (down 9 percent from January), as stocks and sales of the higher-valued larger sizes and premium varieties declined.

### Exports Steady

Fresh pear exports for the first half of the 1991/92 season (July-December) were 70,963 metric tons, up about 2 percent from the same period in the 1990/91 season, compared with the 34-percent gain in 1989/90. U.S. fresh pear exports to Mexico during the last 6 months of 1991 were 13,934 metric tons, up 32 percent from the same period in 1990, due to Mexico's short 1991 pear crop and improved access to the Mexican mar-

ket. Exports to Canada, the most important market for U.S. fresh pears, were 24,652 metric tons, down 3 percent from the same period in 1990.

### Fresh Pear Storage Holdings Down 5 Percent

A shorter 1991/92 crop and brisk movement kept storage holdings of fresh pears at lower levels through most of the 1991/92 season. Storage holdings on January 31, 1992, were down 5 percent from the same time last year. Cumulative fresh pear shipments as of February 29 were 6.46 million cwt., down 6 percent from last year. The low inventory position, combined with strong demand for fresh and processed pears and exports, will result in higher prices and increase the production value for the 1991/92 season's crop.

Table 31--Pears: Utilized production, by State and Pacific Coast, variety composition, 1989-91

State	1989	1990	1991	Pacific Coast	1989	1990	1991
	Short tons				Short tons		
California	315,000	332,000	317,000	Washington:			
Colorado	4,000	2,500	3,100	Bartlett	157,000	177,000	160,000
Connecticut	1,200	1,100	1,200	Other	192,000	195,000	180,000
Michigan	8,000	2,500	5,000	Total	349,000	372,000	340,000
New York	16,500	14,600	14,500	Oregon:			
Oregon	215,000	233,000	220,000	Bartlett	67,000	83,000	70,000
Pennsylvania	5,500	3,300	5,500	Other	148,000	150,000	150,000
Utah	2,600	2,800	2,200	Total	215,000	233,000	220,000
Washington	349,000	372,000	340,000	California:			
United States	916,800	963,800	908,500	Bartlett	298,000	314,000	300,000
				Other	17,000	18,000	17,000
				Total	315,000	332,000	317,000
				3 States:			
				Bartlett	522,000	574,000	530,000
				Other	357,000	363,000	347,000
				Total	879,000	937,000	877,000

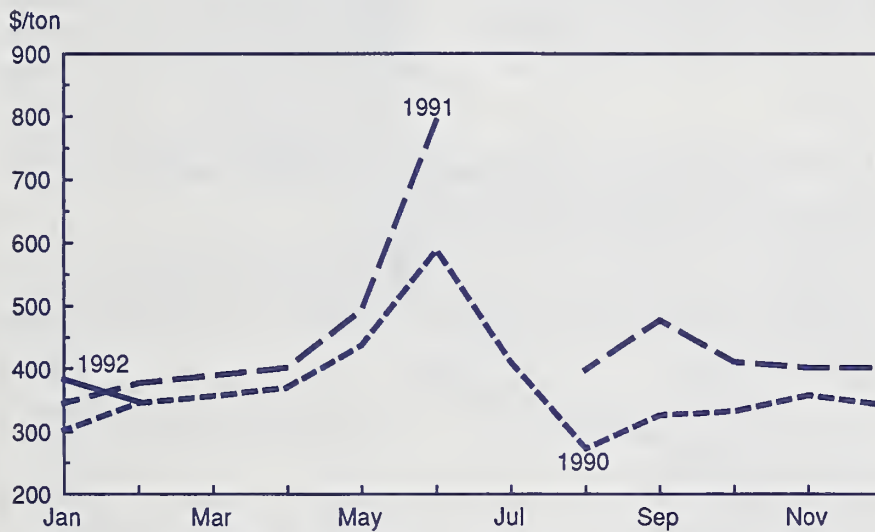
Source: National Agricultural Statistics Service, USDA.

Table 32--Fresh pear storage holdings, month-end, 1988/89-1991/92

Months	1988/89	1989/90	1990/91	1991/92
1,000 pounds				
August	117,594	157,908	199,818	137,452
September	434,015	446,156	578,028	456,260
October	425,720	436,884	449,580	402,790
November	368,325	368,812	322,569	335,363
December	295,514	272,768	266,156	238,892
January	234,583	200,156	191,073	181,474

Source: National Agricultural Statistics Service, USDA.

Figure 10

**U.S. Fresh Pear Price**

# Strawberry Production Value Up 14 Percent in 1991

*Record-high strawberry production increased the value of U.S. production to \$661.8 million in 1991.*

U.S. grower prices for fresh and processing strawberries in 1991 remained near the historic seasonal price pattern, despite the large U.S. crop of 14.0 million cwt., up 12 percent from 1990. Higher prices during the first 6 months of 1991 boosted the U.S.-season-average grower price for fresh market and processing strawberries to \$47.30 per cwt. The total value of the 1991 U.S. strawberry crop was \$661.8 million, up 14 percent from 1990. The larger 1991 crop slowed fresh and frozen strawberry imports, which were down 2 percent and 11 percent, respectively, from 1990.

## California Strawberry Shipments Up in 1991/1992

Heavy rains in mid-February slowed harvesting and adversely affected some strawberry fields in southern California, but normal shipment volume resumed by the end of the month. From December 1, 1991, to March 4, 1992, California shipments totaled 273,684 cwt. This was up 29 percent from the same period of 1991 when fewer fresh California strawberries were available as a result of the December 1990 freeze. Southern

California f.o.b. strawberry prices in late February were about \$12 per twelve 1-pint baskets (medium-to-large-size berries), nearly the same as last year.

California strawberry production was a record 11.3 million cwt. in 1991, up from 9.9 million in 1990. Despite last year's large crop, the California fresh and processed market price for strawberries rose to \$43.70 per cwt. (up from \$42.30 in 1990), which increased

the total value of the State's crop 18 percent to \$493.3 million.

## Florida Strawberry Production and Value Up 13 Percent in 1991

In 1990/91 (November through October) Florida strawberry production was 1.32 million cwt., up 13 percent from the freeze-reduced 1989/90 crop. The value of Florida's strawberry crop was also up 13 percent, to \$84.9 million.

Figure 11

## U.S. Strawberries: Utilized Production and Season-Average Grower Prices

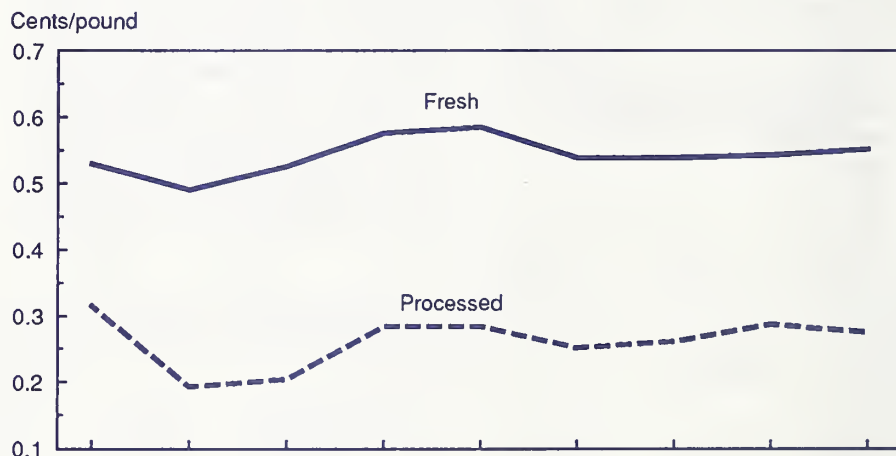
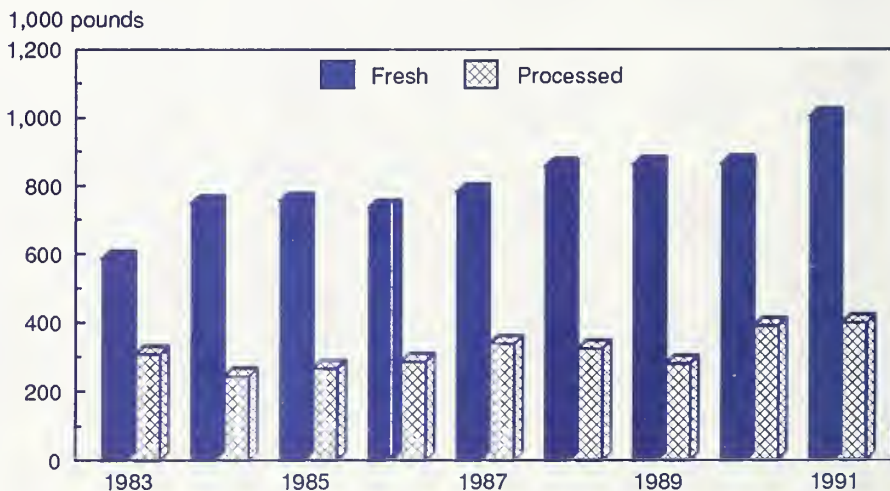


Table 33--Strawberry imports, United States, 1983-91

Calendar year	Fresh	Frozen
Million pounds		
1983	5.1	42.5
1984	8.8	50.9
1985	9.6	59.7
1986	12.9	50.7
1987	33.2	79.2
1988	30.2	64.6
1989	34.7	42.5
1990	32.2	72.0
1991	31.5	64.2

Source: Bureau of Census, Department of Commerce.



Florida strawberry shipments from November 1, 1991, to March 4, 1992, were 348,300 cwt., up 5 percent from last year. Florida field conditions have been generally good. The March 1 forecast for winter strawberry production was 1.32 million cwt., the same as last year. F.o.b. prices in late February for medium-to-large-size strawberries were \$9-\$10 per twelve 1-pint baskets, up from about \$8-\$9 last year.

### Frozen Strawberry Stocks Up 9 Percent

U.S. frozen strawberry stocks on January 31, 1992, were up 9 percent from the year earlier. Wholesale prices for frozen strawberries in February 1992 were about 30 percent lower than in February 1991, reflecting the larger carry-in from the large crop in 1990/91.

Table 35--Stocks of frozen fruits: End of January, 1987-92

Frozen fruit	1987	1988	1989	1990	1991	1992 1/
	1,000 pounds					
Apples	69,645	74,899	73,583	74,009	88,322	91,500
Apricots	3,498	6,490	5,885	7,417	6,466	5,749
Blackberries	15,655	19,649	22,114	13,495	13,424	8,390
Blueberries	43,972	44,015	61,401	64,227	64,705	58,545
Boysenberries	2,699	4,139	3,491	2,611	3,396	1,711
Cherries, tart 2/	127,997	134,922	112,308	119,016	62,063	63,510
Cherries, sweet	11,158	11,722	19,920	19,231	13,087	13,115
Grapes	2,215	2,866	3,973	5,744	4,393	3,325
Peaches	32,371	72,586	89,309	78,978	95,377	75,822
Raspberries, red	23,862	33,036	34,477	33,597	32,088	25,000
Strawberries	128,042	212,150	205,421	142,684	174,944	190,113
Other	171,202	173,685	202,595	166,882	202,396	281,146
Total	632,316	790,159	834,477	727,891	760,661	817,926

1/ Preliminary.

2/ Includes juice cherries.

Source: National Agricultural Statistics Service, USDA.

Table 34--Fruit for processing: Season-average price per short ton received by growers for selected noncitrus fruit, by type of use, and principal State, 1989-91 1/

Fruit, use, & States	1989	1990	1991	Fruit, use, & States	1989	1990	1991
	Dollars				Dollars		
<b>Apricots:</b>				<b>Grapes--California (cont'd):</b>			
Canning				Dried 2/	227	205	206
California	280	274	287	Wine	297	276	281
Freezing				<b>Peaches, clingstone:</b>			
California	310	305	308	Canning			
Drying				California	220	217	224
California 2/	296	287	319	<b>Peaches, freestone:</b>			
<b>Cherries, tart:</b>				Canning			
Processing, all				California	192	204	217
New York	286	400	3/	Freezing			
Pennsylvania	272	--	3/	California	167	178	183
Michigan	290	360	3/	Drying			
Wisconsin	120	172	3/	California 2/	110	108	115
<b>Cherries, sweet:</b>				<b>Pears, Bartlett:</b>			
Processing, all				Canning			
Oregon	508	517	748	Washington	222	214	215
Michigan	398	358	648	California	260	231	245
Washington	406	310	550	Drying			
Canning				California 2/	146	126	150
Washington	611	604	912	<b>Prunes and plums:</b>			
Oregon	680	660	760	Canning			
Michigan	398	358	648	Michigan	117	4/	282
Brining				<b>Prunes:</b>			
Washington	450	420	519	Drying 2/			
Michigan	398	358	648	California	233	266	3/
Oregon	475	470	750				
<b>Grapes--California</b>							
All processing	268	247	252				

-- = Not available.

1/ Prices are basis bulk fruit at first delivery point for all California fruits except prunes and pears for drying and processed grapes.

Prices for California prunes and pears for drying and grapes and for fruits in other States are equivalent processing-plant-door returns.

2/ Fresh basis. 3/ Data available July 7, 1992. 4/ Missing data are not published to avoid disclosure of individual operations.

Source: National Agricultural Statistics Service, USDA.

## Avocado Production Up in 1991/92

*Heavy rains slowed the California avocado harvest in February, but prices remained lower than a year earlier, as California production was projected up about 20 percent. Total Florida avocado shipments in 1991/92 were forecast up 46 percent from 1990/91.*

According to the California Avocado Commission, the State's 1991/92 avocado production (November through October) was expected to be about 20 percent larger than last year's freeze-damaged crop, but still 10 percent below the 10-year average of 188,000 short tons.

Heavy rains during the February harvest in California's coastal areas reduced fruit availability, but normal picking quickly resumed. Between November 1, 1991, and February 22, 1992, California avocado shipments were 31,832 short tons, down 1 percent from the same period a year earlier. However, shipments during the week ending February 22 totaled 3,049 short tons, up 28 percent the same week in 1991.

The larger 1991/92 California crop and light-to-moderate demand kept California's February f.o.b. shipping-point prices about 20 percent lower than last year. The California Avocado Commission's March 1 forecast of the season-average grower price for 1991/92 (weighted for all varieties and sizes) was \$1,200 per ton, down 15 percent from 1990/91. Adequate spring and summer shipments will keep the California season-average grower price below last year.

The February forecast of the 1991/92 Florida avocado crop was 27,500 short tons, up 40 percent from 19,600 short tons in 1990/91. However, the winter varieties had a lighter fruit set than normal. Harvest was essentially complete by the end of March.

### Avocado Exports and Domestic Consumption Declined

Fluctuating avocado supplies, especially from California, have cut ex-

ports the last 3 years. U.S. avocado exports dropped from 4,830 metric tons in 1989/90 (October through September) to 4,265 metric tons in 1990/91. However, the larger 1991/92 U.S. crop increased avocado exports to 1,187 metric tons between October and December 1991, up 36 percent from the same period in 1990. Exports to Canada between

October and December increased from 789 to 1,037 metric tons.

Fluctuations in domestic supply have also contributed to reduced consumption of fresh avocados. Per capita avocado consumption dropped for the third consecutive year to 1.08 pounds in 1990, the lowest in the last 10 years.

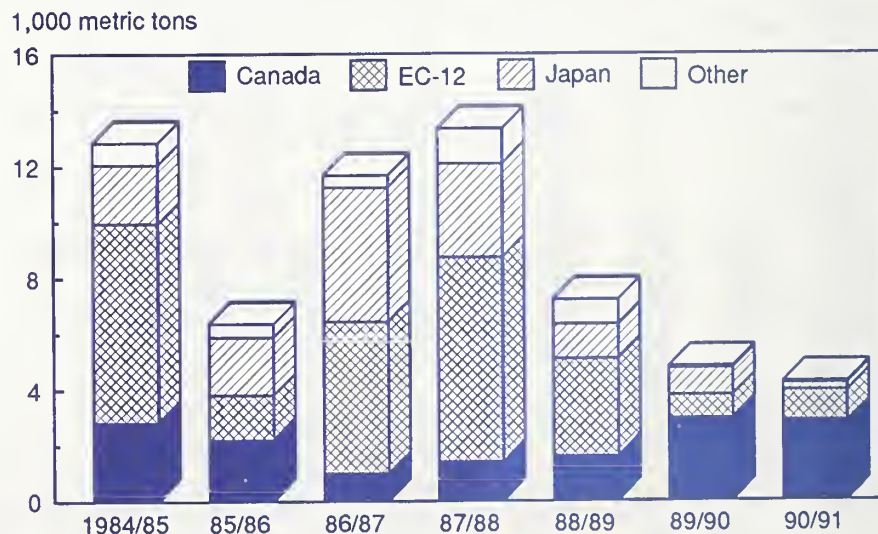
Table 36--U.S. avocado production by State, 1980/81-1990/91

Crop year	Florida	California	Hawaii	Total
1,000 short tons				
1980/81	30.8	238.0	0.8	269.6
1981/82	25.8	157.0	0.6	183.4
1982/83	34.7	202.0	0.8	237.5
1983/84	27.0	247.0	0.6	274.6
1984/85	29.5	200.0	0.6	230.1
1985/86	28.5	160.0	0.6	189.1
1986/87	24.7	278.0	0.7	303.4
1987/88	29.0	180.0	0.5	209.5
1988/89	27.0	165.0	0.6	192.6
1989/90	33.5	105.0	0.6	139.1
1990/91	19.6	136.0	0.5	156.1

Source: National Agricultural Statistics Service, USDA and Hawaii Agricultural Statistics Service.

Figure 12

### U.S. Exports of Avocados



## Poor Weather Slows Chilean Fruit Production Growth, but U.S. Imports Increase

*Abnormal weather conditions in Chile during its deciduous-fruit growing season negatively affected 1991/92 production and export availability. However, most fruit imports from Chile were higher than last year's, and prices were considerably lower.*

Poor weather in November and December negatively affected deciduous fruit production in Chile and reduced expectations of record-high fresh fruit exports to the United States. The Foreign Agricultural Service projected total 1991/92 Chilean fruit production at 1.78 million metric tons, up 1 percent from 1990/91, but considerably less than the growth expected under normal weather conditions. A higher percentage of weather-damaged fruit also slightly reduced availability of export-quality fruit in the early part of the shipping season. In early February, cumulative U.S. imports of table grapes, plums, and nectarines were lower than last year.

But by mid-February, U.S. imports from Chile increased, making cumulative shipments of stone fruit and table grapes ahead of last year. As of February 22, table grape imports were 114,286 metric tons, up 1 percent from last year; fresh peach imports were 25,487 metric tons, up 20 percent; and nectarine imports were 20,181 metric tons, up 16 percent. Fresh plum imports from Chile were 18,912 metric tons, down 2 percent.

In February, larger quantities of fresh fruit imports lowered prices for most fruits 10 to 30 percent from last year. A much larger U.S. supply of fresh oranges and lower citrus prices weakened U.S. demand for these traditional summer fruits.

### Significance of Chilean Imports

Chile has been a major source of off-season fresh fruit for U.S. consumers. Since 1988, Chilean imports accounted for almost 90 percent of total U.S. imports of fresh grapes, peaches, plums, and apricots. In 1990, fresh

table grape shipments from Chile represented more than one-third of the total U.S. table grape supply. Imports of Chilean peaches, plums, and apricots were 16 percent, 10 percent, and 5 percent, respectively, of total U.S. shipments in 1990. Chile has been almost the sole source for these fresh fruits in the United States from January through March.

### Chilean Fruit Expansion Appears To Be Slowing

According to USDA's Foreign Agricultural Service, fruit production in Chile was expected to expand 8 to 15 percent in 1991/92 from the previous year, because of young trees beginning to bear and others reaching mature yield levels. Longer term increases in production and exports will be smaller because the growth

rate for planted fruit area has declined substantially from the early 1980's.

### U.S. Share of Chilean Fruit Exports Declined in 1990/91

The United States' share of Chilean fruit exports declined to 42 percent in 1990/91 from 50 percent in 1989/90, while the EC-12 increased its share of Chilean fruit exports to 43 percent in 1990/91 from 34 percent in 1989/90. Although the United States remained a major market for Chilean exports, a continuation of this trend would mean more competition for Chilean fruit exports and relatively less fruit available for the U.S. market, possibly resulting in higher prices for imported off-season fresh fruit. Higher prices, in turn, would provide an incentive for Chile to continue to increase production.

Table 37--Chilean fruit planted area, 1980-92 1/

Table 27. Orchard with planted area, 1980-92							
	Apples	Apricots and cherries	Peaches and nectarines	Pears	Plums and prunes	Table grapes	Total
Year	1,000 hectares						
1980	14.3	3.2	13.3	3.3	3.7	13.5	51.3
1981	15.5	3.5	13.9	3.6	4.7	16.9	58.1
1982	16.7	3.8	14.5	3.9	5.5	20.3	64.7
1983	17.6	3.9	14.3	4.4	6.4	24.1	70.7
1984	18.6	4.1	14.3	4.8	7.2	28.7	77.7
1985	19.0	4.2	14.4	5.8	7.9	35.4	86.7
1986	21.6	4.8	15.1	7.6	8.4	38.8	96.3
1987	22.2	5.2	15.5	9.0	9.1	42.2	103.2
1988	22.9	5.2	16.0	9.5	9.0	43.5	106.1
1989	24.8	5.7	17.0	12.6	9.4	46.6	116.1
1990	23.0	5.8	17.4	13.9	9.6	47.8	117.5
1991	23.1	6.1	17.8	15.0	9.8	47.8	119.6
1992 2/	23.3	6.2	18.0	15.7	9.9	48.0	121.1

1/ Marketing years begin: apples-February of the year shown, apricots and cherries-November of previous year, peaches and nectarines, pears, plums and prunes-January of year shown, and table grapes-December of previous year shown. 2/ Preliminary.

Source: Foreign Agricultural Service, USDA.

## Tree Nut Production Falls in 1991, Prices Higher

*Tree nut production in 1991 was lower than expected, down 13 percent from 1990. Large 1991/92 beginning stocks helped boost supply. Prices were mostly higher, but lower production caused grower receipts to fall for several crops. Prospects for improved prices in 1992/93 will be bolstered by lower carry-in stocks and grower receipts could make modest gains.*

U.S. tree nut production in 1991 totaled 831,500 short tons (in-shell-equivalent weight), down 13 percent from 1990's large production, but 3 percent above the 1989 harvest of 806,800 tons. Utilized production of almonds and pistachios were down substantially. In 1991, macadamias were only slightly lower, which more than offset increases in hazelnuts, pecans, and walnuts. The lower production was primarily due to reduced yields, as acreage overall was unchanged. The number of bearing acres of all tree nut crops (except pecans) set a new record in 1991, 688,400 acres, slightly higher than the previous year.

With normal weather, production of most U.S. tree nut crops is expected to be moderately higher in 1992. Production of some tree nuts (especially almonds and pistachios) is likely to rise because of the alternate-year production pattern, which is typically large 1 year and small the next year. Hazelnut and walnut production are likely to decrease, while pecan and macadamia production is uncertain.

### Grower Receipts Slightly Lower

The preliminary value of production for domestic tree nuts (excluding walnuts, which will be available July 7, 1992) was \$940 million in 1991, down 8 percent from a year earlier and 21 percent above 1989. Total 1990 grower receipts were record-high, \$1.26 billion. The 1991 production value increased for hazelnuts and pecans but decreased for almonds, pistachios, and macadamias.

Prices received by growers were higher for almonds and pistachios, but slightly lower for pecans, macadamias, and hazelnuts. Prices are expected to improve for most tree nut crops harvested in 1992. Combined with higher expected production, this may result in a moderate increase in grower receipts.

### Almond Grower Prices and Cash Receipts Could Improve in 1992, Even If Production Rises

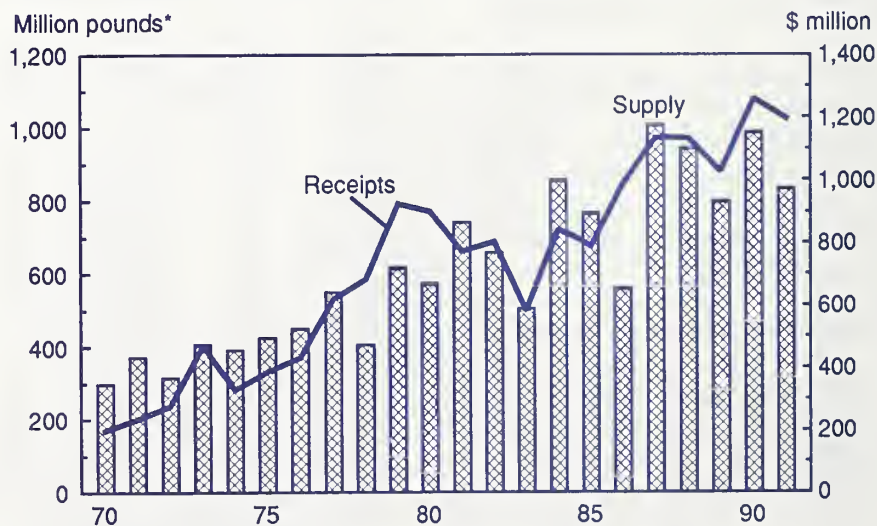
California almond production in 1991 was 470 million pounds (shelled basis) down 29 percent from the record 1990 harvest, but only 4 percent below the 1989 harvest. However, this season's total supply, approximately 680 million pounds, was down about 165 million pounds, nearly 20 percent, from 1990/91. Supply was lowered again in 1991/92 because 45 million pounds were held off the market in a

reserve pool. Beginning stocks for 1991/92, at 241 million pounds, were significantly higher than the previous season. Record shipments to domestic and export markets are forecast for the 1991/92 marketing season, which would leave the smallest carry-over stocks since the 1986/87 marketing season. Even if the 1992 crop is large, the substantially lower carry-over stocks from the 1991 crop should help to sustain the price recovery into the 1992/93 marketing season.

California bearing acreage slipped to 409,000 acres in 1991 and is likely to decline further as removals will more than offset the small number of plantings in recent years. The total 1991 yield, 1,150 shelled pounds per acre, was well below normal, but could rebound in 1992 due to the alternate bearing characteristic of this crop.

Figure 13

### U.S. Tree Nut Supply vs. Grower Cash Receipts



\* Shelled-basis production.

The average grower price rose to \$1.10 per pound in 1991, compared with \$0.92 in 1990 and \$1.02 in 1989. Price prospects may improve further in 1992/93 if world supplies fall. The industry reports that almond prices are trending up and buyers are bumping up against the reserve. The Almond Board of California announced in January that it will release, pending USDA approval, one-half of the 1991 crop reserve on March 1, 1992, and the remainder on May 1, 1992. The 1991/92 reserve was established at 10 percent of the 1991 almond crop.

World supply reached slightly more than 516,000 metric tons (shelled basis), 13 percent lower than the record high set in 1990/91, mostly due to smaller stocks in Spain and a smaller U.S. crop. Almond supplies in 1990/91 were also smaller in Greece, Italy, and Portugal. Consumption and exports for the United States and other major producing countries are expected to reach new record highs in 1991/92. Ending stocks for the seven leading almond producing countries are expected to fall from the 1990/91 highs to unusually low levels in 1991/92. This would help to boost grower prices in 1992/93.

#### **Hazelnut World Supplies Down Sharply in 1991/92**

U.S. production in 1991, at 25,300 tons, was well above normal. Acreage is trending up and the yield was excellent; however, production and yield are likely to fall in 1992. Last season's grower price was \$742 per ton, lower than the 1990 grower price of \$784 per ton. However, due to the large crop, total grower receipts made a significant jump over the two previous seasons. This is not expected to be repeated in the 1992/93 season. Prices are not likely to improve much, especially if world supplies rebound in 1992.

The world hazelnut supply has declined during the two previous seasons from a record high of 825,000 metric tons in 1989/90. Hazelnuts have been in larger supply than other tree nuts, mostly the result of bumper crops in Turkey. If foreign production rebounds in 1992, it would cause already burdensome stocks to increase.

#### **U.S. Pistachio Crop Expected To Climb in 1992**

California's 1991 pistachio production of 77 million pounds (in-shell basis) was down 36 percent from the 1990 record harvest of 120 million pounds. However, 1991 production was much higher than had been forecast due to a surprisingly high yield of 1,490 pounds per acre and a 4-percent increase in the number of bearing acres to 51,600. It was anticipated that the 1991 crop would be down substantially as it was the "off-year" for this alternate bearing crop which is typically large 1 year and small the next. So, the expectation for the 1992 crop, an "on-year" for the pistachio's bearing cycle, is for a much larger crop.

Although the U.S. pistachio crop was lower in 1991, most foreign crops were larger. This put some downward pressure on prices in international markets. It is likely that foreign crops will be moderately smaller in 1992 which will brighten export prospects for U.S. pistachios. As American crop supplies increase, it will be timely for the U.S. industry to continue its efforts to obtain a larger share of export markets.

The U.S. grower price rose sharply in 1991 to \$1.32 per pound, compared with \$1.08 in 1990, but this was still well below the 1989 grower price of \$1.63. The grower price will likely fall significantly in 1992/93, but it is not likely to offset the larger expected production. As a result, growers

would receive higher cash receipts than the 1990/91 record of \$130 million.

Bearing acreage is still increasing, but new plantings have slowed substantially in recent years. This portends a continued upward trend in production in future years, but it will be at a slower pace than in recent history. Higher production will result in a buildup in carryover stocks unless the pistachio industry can substantially boost domestic consumption and exports. This tree nut industry, more than any other, faces the difficult task of balancing an increasing, but extremely variable, supply with demand.

#### **Smaller-Than-Expected 1991 Pecan Crop Keeps Prices High**

U.S. pecan growers harvested 246 million pounds (in-shell basis) in 1991, much less than expected at the beginning of the season. The crop was 20 percent larger than the small 1990 crop (205 million pounds), but slightly smaller than the 1989 crop. Lower supplies, even with more Mexican imports, kept grower prices historically high. The 1991 season-average grower price was \$1.16 per pound (in-shell basis), only 5 cents below the 1990 record of \$1.21 per pound. This has pushed 1991/92 grower receipts to a record \$284 million.

Because pecans were in very short supply at the end of the 1990/91 marketing season, prices continued to be very strong into the next season. As the 1991/92 season progressed, the expected larger supplies did not develop, especially supplies of high-quality pecans. Weather, insect, and disease problems adversely impacted yields and quality, cutting the supply of good-quality pecans and causing f.o.b. price offerings to be only marginally lower than the record highs set in the prior season. Pecan prices were also bolstered by strong prices

for excellent-quality walnuts, which were characteristic of the 1991 crop.

Grower cash receipts may moderate significantly next season, especially if pecan production and supplies of competing nuts increase in 1992/93. The trend will continue upward for pecan production as the inventory of trees under 10 years of age is significant.

Beginning with the 1992/93 marketing season, the pecan industry will implement its new national research and promotion program which was authorized by the 1990 farm bill. This program will assist the U.S. pecan industry to organize and develop better national marketing, research, and promotion efforts.

#### Record Walnut Crop in 1991, Excellent Quality Keeps Prices Firm

The production of California English walnuts last year was the largest ever, 10 percent above the 1990 crop, and slightly higher than the previous record of 247,000 tons in 1987. At 250,000 tons (in-shell basis), the 1991

crop pushed supplies to a record high. However, due to one of the best quality crops seen in recent years, grower season-average prices are not expected to be much different than prices for the 1990 or 1989 crops.

The 1991 preliminary yield estimate is 1.38 tons per acre, only slightly lower than the 1987 record. Production and yield will likely be moderately lower in 1992. The number of bearing acres in 1991 was unchanged from the 1990 estimate of 181,000 acres. New plantings in recent years were below historic levels and bearing acreage is likely to decline modestly in the near future.

Domestic consumption and exports may hit new records in 1991/92. However, carryover stocks for 1992/93 are likely to reach a new high which would put a damper on grower prices for the 1992 crop. Because pecan prices have been very high this season and last, packers indicate that some customers are switching from pecans to walnuts. This has helped to keep domestic

demand for walnuts strong and their price firm. Grower prices may average slightly higher this season due to strong demand for shelled walnuts, better-quality walnuts, and reduced competition from pecans due to higher prices.

Although foreign walnut supplies slipped lower this season, U.S. sellers may see more competition in 1992/93. U.S. walnut exports have made considerable gains in the last two seasons.

#### Macadamia Nut Production Steady but Price Falls

Acreage and production of Hawaiian macadamias continued steadily in 1991. However, the grower price for the 1991 crop fell to \$0.72 per pound, compared with \$0.82 in 1990 and \$0.89 per pound in 1989. The Hawaiian crop is facing more competition for sales to the mainland and for export markets as foreign supplies increase, but this does not appear to be hampering local demand, including tourist purchases of gift packs, which are growing tremendously.

Table 38--Fruits and tree nuts, bearing acreage, United States, 1980-91

Year	Citrus fruit 1/	Major deciduous fruits 2/	Miscellaneous noncitrus 3/	Tree nuts 4/	Total fruits and tree nuts 5/
--1,000 acres--					
1980	1,161.8	1,629.7	248.2	565.7	3,605.4
1981	1,148.0	1,612.1	255.0	561.4	3,576.5
1982	1,124.3	1,640.3	200.7	579.1	3,544.4
1983	1,091.6	1,674.4	207.0	599.0	3,572.0
1984	1,007.9	1,703.8	209.7	623.8	3,545.2
1985	899.3	1,725.0	212.3	657.1	3,493.7
1986	818.9	1,727.7	215.8	669.5	3,431.9
1987	826.2	1,739.1	217.1	675.4	3,457.8
1988	832.9	1,748.4	217.4	686.3	3,485.0
1989	847.5	1,750.8	212.5	686.6	3,497.3
1990	851.8	1,755.1	205.8	688.4	3,501.0
1991 6/	850.3	1,750.3	118.1	688.4	3,407.1

1/ Grapefruit, lemons, limes, oranges, tangelos, tangerines (including honey tangerines), and Temples. Acreage was for the year harvest was completed.

2/ Commercial apples, apricots, cherries, grapes, nectarines, peaches, pears, plums, and prunes. 3/ Avocados, bananas, cranberries, dates, figs, guavas (beginning 1988), kiwifruit, olives, papayas, pineapples, and pomegranates (until 1989). 4/ Almonds, hazelnuts, macadamia nuts, pistachios, and walnuts. 5/ Some totals may not add due to rounding. 6/ Preliminary, avocados and guavas not included.

Source: National Agricultural Statistics Service, USDA.

Table 39--World tree nuts: Production, supply, and distribution, by country, 1989/90-1991/92 1/

Country	Marketing year 2/	Beginning stocks	Production	Imports	Total supply	Exports	Domestic consumption	Ending stocks	Total distribution
Metric tons, in-shell basis									
China (Mainland)	1989/90	0	160,050	0	160,050	39,533	120,517	0	160,050
	1990/91	0	149,560	0	149,560	34,000	115,560	0	149,560
	1991/92	0	152,500	0	152,500	34,500	118,000	0	152,500
France	1989/90	0	25,800	7,400	33,200	11,900	16,300	5,000	33,200
	1990/91	5,000	24,600	7,700	37,300	14,000	23,300	0	37,300
	1991/92	0	11,500	12,000	23,500	2,000	21,500	0	23,500
Greece	1989/90	10,137	62,083	5,478	77,698	15,065	50,786	11,847	77,698
	1990/91	11,847	54,255	9,158	75,260	6,094	50,786	18,380	75,260
	1991/92	18,380	38,730	10,124	67,234	6,750	50,786	9,698	67,234
India	1989/90	980	17,000	0	17,980	8,500	9,000	480	17,980
	1990/91	480	20,000	0	20,480	10,000	9,800	680	20,480
	1991/92	680	17,000	0	17,680	9,000	8,500	180	17,680
Italy	1989/90	52,880	221,240	60,101	334,221	114,106	177,435	42,680	334,221
	1990/91	42,680	161,570	86,460	290,710	57,060	193,710	39,940	290,710
	1991/92	39,940	192,630	73,290	305,860	88,495	197,875	19,490	305,860
Morocco	1989/90	1,998	36,996	180	39,174	4,083	32,095	2,997	39,174
	1990/91	2,997	38,428	400	41,825	3,996	34,665	3,164	41,825
	1991/92	3,164	40,626	333	44,123	3,996	36,464	3,663	44,123
Portugal	1989/90	559	11,655	686	12,900	3,716	7,659	1,525	12,900
	1990/91	1,525	8,325	3,497	13,347	2,997	8,159	2,191	13,347
	1991/92	2,191	9,990	666	12,847	3,663	8,492	693	12,847
Spain	1989/90	132,812	291,400	10,691	434,903	122,360	127,550	184,993	434,903
	1990/91	184,993	184,500	19,320	388,813	104,900	131,550	152,363	388,813
	1991/92	152,363	200,150	8,160	360,673	122,550	131,550	106,573	360,673
Syria	1989/90	460	15,800	2,500	18,760	1,000	17,500	260	18,760
	1990/91	260	20,000	1,500	21,760	1,500	19,000	1,260	21,760
	1991/92	1,260	22,000	1,000	24,260	2,000	20,000	2,260	24,260
Turkey	1989/90	111,660	648,950	0	760,610	217,943	312,677	229,990	760,610
	1990/91	229,990	518,950	0	748,940	323,665	306,285	118,990	748,940
	1991/92	118,990	509,280	0	628,270	208,998	293,282	125,990	628,270
United States 2/	1989/90	470,747	977,416	12,274	1,460,437	608,231	475,883	374,861	1,460,437
	1990/91	374,861	1,276,022	14,593	1,665,477	644,726	540,973	479,158	1,665,477
	1991/92	479,158	966,975	7,286	1,453,419	661,997	604,379	187,043	1,453,419
Totals	1989/90	782,233	2,468,390	99,310	3,349,933	1,146,437	1,347,401	854,633	3,349,933
	1990/91	854,633	2,456,210	142,627	3,453,471	1,202,938	1,433,787	816,125	3,453,471
	1991/92	816,125	2,161,381	112,859	3,090,365	1,143,949	1,490,827	455,589	3,090,365

1/ Includes almonds, hazelnuts, pistachios (except Iran), and walnuts.

2/ Marketing year varies by crop.

Source: Horticultural Products Review, FAS, USDA.

Table 40--Peaches: Total production and season-average prices received by growers, 1989, 1990, and indicated 1991 production

State	Production			Price per pound		
	1989	1990	1991	1989	1990	1991
	Million pounds			Cents		
Alabama	15.0	12.0	16.0	0.246	0.238	0.213
Arkansas	2.5	18.0	12.0	0.241	0.246	0.250
California:						
Clingstone	992.0	1,012.0	1,030.0	0.107	0.107	0.109
Freestone	549.0	600.0	610.0	0.154	0.170	0.132
Colorado	1/	17.0	2.0	1/	0.356	0.380
Connecticut	4.0	3.6	3.4	0.500	0.470	0.510
Delaware	0.4	0.2	3.0	0.338	0.415	0.285
Georgia	125.0	130.0	150.0	0.202	0.299	0.241
Idaho	4.0	4.7	1/	0.384	0.217	1/
Illinois	13.0	0.3	19.5	0.270	0.343	0.330
Indiana	4.0	0.8	4.6	0.322	0.341	0.396
Kansas	2.5	0.1	5.0	0.270	0.230	0.370
Kentucky	2.0	1/	4.0	0.376	1/	0.350
Louisiana	1.4	4.0	5.0	0.360	0.340	0.360
Maryland	7.6	4.0	15.0	0.280	0.327	0.242
Massachusetts	2.1	2.0	2.0	0.500	0.470	0.510
Michigan	55.0	45.0	40.0	0.191	0.210	0.174
Mississippi 2/	1.0	--	--	0.400	--	--
Missouri	4.5	0.7	11.0	0.270	0.300	0.230
New Jersey	70.0	45.0	115.0	0.346	0.409	0.253
New York	12.5	14.0	15.0	0.294	0.276	0.274
North Carolina	12.0	10.0	35.0	0.175	0.270	0.176
Ohio	8.0	5.5	5.8	0.340	0.380	0.400
Oklahoma	25.0	8.0	31.0	0.275	0.363	0.305
Oregon	14.0	14.5	13.0	0.247	0.299	0.356
Pennsylvania	65.0	76.0	100.0	0.258	0.289	0.201
South Carolina	270.0	110.0	310.0	0.200	0.243	0.177
Tennessee	1.3	1.3	6.5	0.369	0.370	0.300
Texas	14.0	24.0	32.0	0.400	0.350	0.340
Utah	11.0	12.0	2.5	0.215	0.240	0.340
Virginia	15.0	2.5	26.0	0.213	0.315	0.191
Washington	44.0	53.0	30.0	0.255	0.255	0.212
West Virginia	9.0	3.0	18.0	0.256	0.268	0.143
United States	2,355.8	2,233.2	2,672.3	0.164	0.174	0.158

-- = Not available.

1/ No significant commercial production due to frost.

2/ Estimates discontinued after the 1989 crop.

Source: National Agricultural Statistics Service, USDA.

Table 41--Production and utilization of specified noncitrus fruits, United States, 1989-91

Commodity and year	Production		Utilization 1/										
	Total	Utilized 2/	Fresh	Processed (fresh equivalent)							Dried	Other 3/	Total 2/
				Canned	Frozen	Brined	Crushed for						
							Wine	Juice	Oil				
--1,000 short tons--													
Apricots:													
1989 4/	120.0	119.0	15.8	67.0	11.0	--	--	--	--	25.0	--	103.2	
1990 4/	122.5	120.4	23.7	64.0	11.0	--	--	--	--	21.0	--	96.7	
1991 4/	95.8	91.8	20.1	43.0	11.0	--	--	--	--	17.0	--	71.7	
Bananas:													
1989	--	6.0	6.0	--	--	--	--	--	--	--	--	--	
1990	--	5.7	5.7	--	--	--	--	--	--	--	--	--	
1991	--	5.4	5.4	--	--	--	--	--	--	--	--	--	
Cherries, sweet:													
1989	193.5	190.9	103.5	15.0	--	58.0	--	--	--	--	5/ 14.5	87.4	
1990	156.7	132.4	70.5	9.1	--	39.7	--	--	--	--	5/ 13.2	61.9	
1991	151.6	143.4	67.7	10.4	--	51.7	--	--	--	--	5/ 13.7	75.7	
Cherries, tart:													
1989	132.1	121.5	3.4	25.4	88.1	--	--	--	--	--	4.7	118.2	
1990	104.4	101.5	2.6	35.6	59.9	--	--	--	--	--	3.5	98.9	
1991	95.0	94.9	1.9	30.6	60.2	--	--	--	--	--	2.3	93.0	
Dates:													
1989	22.0	22.0	22.0	--	--	--	--	--	--	--	--	--	
1990	24.0	24.0	24.0	--	--	--	--	--	--	--	--	--	
1991	24.0	24.0	24.0	--	--	--	--	--	--	--	--	--	
Figs:													
1989	48.0	48.0	1.5	--	--	--	--	--	--	46.5	--	46.5	
1990	48.7	48.7	1.6	--	--	--	--	--	--	47.1	--	47.1	
1991	37.0	37.0	1.3	--	--	--	--	--	--	35.7	--	35.7	
Grapes:													
1989	5,930.9	5,930.1	787.2	40.0	--	--	2,850.1	388.8	--	1,864.0	--	5,142.8	
1990	5,659.9	5,659.8	849.0	40.0	--	--	2,698.0	325.7	--	1,747.1	--	4,810.8	
1991	5,450.9	5,450.3	774.4	41.0	--	--	2,635.8	413.6	--	1,585.5	--	4,675.9	
Kiwifruit:													
1989	40.0	37.0	37.0	--	--	--	--	--	--	--	--	--	
1990	39.0	34.0	34.0	--	--	--	--	--	--	--	--	--	
1991	29.5	27.5	27.5	--	--	--	--	--	--	--	--	--	
Nectarines:													
1989	220.0	220.0	219.0	--	--	--	--	--	--	--	--	1.0	
1990	232.0	232.0	229.5	--	--	--	--	--	--	--	--	2.5	
1991	205.0	205.0	201.0	--	--	--	--	--	--	--	--	4.0	
Olives:													
1989	123.0	123.0	0.5	6/ 94.0	--	--	--	--	5.5	--	7/ 23.0	122.5	
1990	131.5	131.5	0.5	6/ 88.0	--	--	--	--	5.0	--	7/ 38.0	131.0	
1991	65.0	65.0	0.5	6/ 54.0	--	--	--	--	1.6	--	7/ 8.9	64.5	
Papayas:													
1989	--	37.0	32.0	--	--	--	--	--	--	--	--	5.0	
1990	--	34.3	29.0	--	--	--	--	--	--	--	--	5.3	
1991	--	27.0	23.5	--	--	--	--	--	--	--	--	3.5	
Peaches:													
1989	1,177.9	1,114.9	529.8	459.2	72.0	--	--	--	--	14.3	39.7	585.1	
1990	1,116.6	1,069.8	466.9	480.5	84.1	--	--	--	--	13.6	24.9	603.0	
1991	1,336.2	1,245.9	609.1	493.6	80.8	--	--	--	--	22.2	40.4	636.9	
Pears:													
1989	916.8	916.5	454.2	8/ 455.5	--	--	--	--	--	6.7	--	462.2	
1990	963.8	958.7	467.3	8/ 488.1	--	--	--	--	--	7.6	--	496.4	
1991	908.5	908.4	466.5	8/ 432.6	--	--	--	--	--	9.3	--	441.9	
Pineapples:													
1989	--	580.0	145.0	--	--	--	--	--	--	--	--	435.0	
1990	--	575.0	141.0	--	--	--	--	--	--	--	--	434.0	
1991	--	555.0	125.0	--	--	--	--	--	--	--	--	430.0	
Plums, CA:													
1989	216.0	216.0	--	--	--	--	--	--	--	--	--	--	
1990	223.0	223.0	--	--	--	--	--	--	--	--	--	--	
1991	218.0	218.0	--	--	--	--	--	--	--	--	--	--	
Prunes, CA:													
1989	754.8	754.8	--	--	--	--	--	--	--	754.8	--	754.8	
1990	463.1	463.1	--	--	--	--	--	--	--	463.1	--	463.1	
1991	567.0	567.0	--	--	--	--	--	--	--	567.0	--	567.0	
Other prunes & plums 9/:													
1989	47.0	43.9	22.8	13.0	1.2	--	--	--	--	7.0	--	21.1	
1990	47.8	43.2	24.3	9.6	0.9	--	--	--	--	8.4	--	18.9	
1991	25.1	24.8	14.0	6.9	1.0	--	--	--	--	3.0	--	10.8	
Strawberries:													
1989	571.0	571.0	430.8	--	--	--	--	--	--	--	--	140.2	
1990	627.2	627.2	432.1	--	--	--	--	--	--	--	--	195.1	
1991	700.3	700.3	501.1	--	--	--	--	--	--	--	--	199.2	

1/ For all items except bananas and California apricots, dates, plums, and prunes, some quantities canned, frozen, or otherwise processed are included in other utilization categories to avoid disclosure of individual operations. 2/ Some totals do not add due to rounding. 3/ Tart cherries, juice, wine, and brined; sweet cherries, frozen, juice, etc.; and olives, chopped, minced, brined, and other cures. 4/ Missing data are not published to avoid disclosure of individual operations, but are included in total. 5/ Frozen juices. 6/ Canning size fruit only, mostly whole and pitted but also includes some chopped and sliced. 7/ Limited (canned sliced, chopped, wedged and undersize. 8/ Mostly canned, includes small quantities dried; other, excluding California dried pears, uses not published by State to avoid disclosure of individual operations. 9/ Michigan, Idaho, Oregon, and Washington.

Source: National Agricultural Statistics Service, USDA.

Table 42--Fruit and edible tree nuts: Utilized production, 1990 and 1991

Commodity	Unit	1990			1991 1/		
		Fresh	Processed	All	Fresh	Processed	All
Noncitrus:							
Apples, commercial	Mil. lbs.	5,551	4,107	9,658	5/	5/	9,810
Apricots, 3 States	Tons	23,740	96,700	120,440	20,140	71,650	91,790
Avocados 2/	Tons	143,675	12,375	156,050	5/	8/	5/
Avocados, California 2/	Tons	124,000	12,000	136,000	5/	8/	5/
Bananas, Hawaii	1,000 lbs.	11,300	--	11,300	10,700	--	10,700
Cherries, sweet	Tons	70,500	61,850	132,350	67,680	75,720	143,400
Cherries, tart	Mil. lbs.	5	198	203	4	186	190
Cranberries	Tons	10,810	9/ 158,740	169,550	6/	6/	209,350
Dates, California	Tons	24,000	8/	24,000	24,000	8/	24,000
Figs, California	Tons	1,600	47,100	48,700	1,300	35,700	37,000
Grapes	Tons	848,980	4,810,800	5,659,780	774,400	4,675,870	5,450,270
Grapes, California	Tons	821,000	4,364,000	5,185,000	747,000	4,128,000	4,875,000
Guavas, Hawaii	1,000 lbs.	--	22,130	22,130	--	5/	5/
Kiwifruit, California	Tons	34,000	8/	34,000	27,500	8/	27,500
Nectarines, California	Tons	229,500	2,500	232,000	201,000	4,000	205,000
Olives, California	Tons	500	131,000	131,500	500	64,500	65,000
Papayas, Hawaii	1,000 lbs.	58,000	10,500	68,500	47,000	7,000	54,000
Peaches	Mil. lbs.	934	1,206	2,140	1,218	1,274	2,492
Pears	Tons	467,260	7/ 496,390	963,650	466,500	7/ 441,850	908,350
Pineapples, Hawaii	Tons	141,000	434,000	575,000	125,000	430,000	555,000
Plums, California	Tons	8/	8/	223,000	8/	8/	218,000
Prunes, California	Tons	--	147,000	147,000	--	180,000	180,000
Prunes and plums, other States	Tons	24,300	18,900	43,200	13,990	10,810	24,800
Strawberries	1,000 lbs.	864	390	1,254	1,002	398	1,401
Citrus: 3/							
Oranges	1,000 tons	2,103	5,642	7,745	1,205	6,682	7,887
Tangerines	1,000 tons	111	53	164	116	48	164
Grapefruit	1,000 tons	882	1,096	1,978	1,240	1,015	2,255
Lemons	1,000 tons	466	240	706	453	269	722
Limes	1,000 tons	44	28	72	41	23	64
Tangelos	1,000 tons	50	82	132	53	66	119
Templets	1,000 tons	6	57	63	36	77	113
Tree Nuts:							
Almonds, California 4/	1,000 lbs.	--	--	660,000	--	--	470,000
Hazelnuts, 2 States	Tons	--	--	21,700	--	--	25,300
Macadamia nuts, Hawaii	1,000 lbs.	--	--	50,000	--	--	49,500
Pistachios	1,000 lbs.	--	--	120,000	--	--	77,000
Pecans, all	1,000 lbs.	--	--	205,000	--	--	245,500
Improved	1,000 lbs.	--	--	143,500	--	--	145,000
Native and seedling	1,000 lbs.	--	--	41,250	--	--	82,800
Walnuts, 2 States	Tons	--	--	227,000	--	--	250,000

-- = Not available.

1/ Preliminary. 2/ Column headed 1990 refers to 1990/91 crop. 3/ Column headed 1990 refers to 1989/90 crop. 4/ Shelled basis. 5/ Data available July 7, 1992. 6/ Data available August 18, 1992. 7/ Processed mostly canned, but includes small quantities of dried and other uses. 8/ Missing data are not published to avoid disclosure of individual operations. 9/ Includes shrinkage.

Source: National Agricultural Statistics Service, USDA.

Table 43--Fruit and edible tree nuts: Value of utilized production, 1990 and 1991

Commodity	1990			1991 1/		
	Fresh	Processed	All	Fresh	Processed	All
1,000 dollars						
<b>Noncitrus:</b>						
Apples, commercial	1,161,890	295,006	1,456,896	5/	5/	1,754,020
Apricots, 3 States	14,030	26,907	40,937	16,149	21,207	37,356
Avocados 2/	189,846	17,085	206,931	5/	5/	5/
Avocados, California 2/	176,080	17,040	193,120	5/	5/	5/
Bananas, Hawaii	4,294	--	4,294	4,494	--	4,494
Cherries, sweet	92,098	26,221	118,319	87,042	50,617	137,659
Cherries, tart	1,954	34,731	36,685	5/	5/	5/
Cranberries	--	--	156,365	--	--	6/
Dates, California	20,880	--	20,880	26,880	--	26,880
Figs, California	--	--	17,273	--	--	5/
Grapes	457,768	1,212,700	1,670,468	425,129	1,189,806	1,614,935
Grapes, California	430,735	1,077,310	1,508,045	401,048	1,040,877	1,441,925
Guavas, Hawaii	--	3,320	3,320	--	5/	5/
Kiwifruit, California	14,100	--	14,100	5/	--	5/
Nectarines, California	--	--	109,999	--	--	82,369
Olives, California	250	64,059	64,309	250	40,893	41,143
Papayas, Hawaii	14,500	305	14,805	16,262	203	16,465
Peaches	246,871	124,755	371,626	258,682	134,000	392,682
Pears	168,323	7/ 101,218	269,541	182,885	7/ 95,083	277,968
Pineapples, Hawaii	54,285	52,080	106,365	51,875	55,900	107,775
Plums, California	--	--	134,412	--	--	97,894
Prunes, California	--	128,331	128,331	--	5/	5/
Prunes and plums, other States	6,077	2,367	8,444	4,682	2,402	7,084
Strawberries	468,000	112,101	580,101	552,702	109,120	661,822
<b>Citrus: 3/</b>						
Oranges	563,793	905,106	1,468,899	526,777	1,145,213	1,671,990
Tangerines	66,814	5,274	72,088	73,075	4,678	77,753
Grapefruit	263,528	108,369	371,897	312,035	68,729	380,764
Lemons	260,081	19,744	279,825	276,147	18,387	294,534
Limes	21,412	1,472	22,884	26,226	1,633	27,859
Tangelos	11,068	9,710	20,778	14,232	7,613	21,845
Templets	2,724	7,944	10,668	10,270	9,456	19,726
<b>Tree Nuts:</b>						
Almonds, California 4/	--	--	591,560	--	--	499,400
Hazelnuts, 2 States	--	--	17,011	--	--	18,771
Macadamia nuts, Hawaii	--	--	41,000	--	--	35,640
Pistachios	--	--	129,600	--	--	101,640
Pecans, all	--	--	247,590	--	--	284,375
Improved	--	--	184,135	--	--	185,119
Native and seedling	--	--	37,212	--	--	71,441
Walnuts, 2 States	--	--	229,270	--	--	5/

-- = Not available.

1/ Preliminary, January 1992. 2/ Column headed 1990 refers to 1990/91 crop. 3/ Column headed 1990 refers to 1989/90 crop. 1991 is preliminary, September 1991. 4/ Shelled basis. 5/ Data available July 7, 1992. 6/ Data available August 18, 1992. 7/ Processed mostly canned, but includes small quantities of dried and other uses.

Source: National Agricultural Statistics Service, USDA.

Table 44--Fruit and edible tree nuts: Season-average prices per unit received by growers, 1990 and 1991

Commodity	Unit	1990			1991 1/		
		Fresh	Processed	All	Fresh	Processed	All
Dollars							
Noncitrus: 2/							
Apples, commercial	Pounds	0.209	0.072	0.151	6/	6/	0.179
Apricots, 3 States	Tons	591	276	340	802	289	407
Avocados 3/	Tons	1,320	1,380	1,330	6/	6/	6/
Avocados, California 3/	Tons	1,420	1,420	1,420	6/	6/	6/
Bananas, Hawaii	Pounds	0.380	--	0.380	0.420	--	0.420
Cherries, sweet	Tons	1,310	424	894	1,286	668	960
Cherries, tart	Pounds	0.383	0.176	0.181	6/	6/	6/
Cranberries	Tons	--	--	0.922	--	--	7/
Dates, California	Tons	870	--	870	1120	--	1,120
Figs, California	Tons	--	--	355	--	--	6/
Grapes	Tons	539	252	295	549	254	296
Grapes, California	Tons	525	247	291	537	252	296
Guavas, Hawaii	Pounds	--	0.150	0.150	--	6/	6/
Kiwifruit, California	Tons	415	--	415	6/	--	6/
Nectarines, California	Tons	--	--	474	--	--	402
Olives, California	Tons	500	489	489	500	634	633
Papayas, Hawaii	Pounds	0.250	0.029	0.216	0.346	0.029	0.305
Peaches	Pounds	0.264	0.104	0.174	0.212	0.105	0.158
Pears	Tons	360	8/ 205	280	392	8/ 216	306
Pineapples, Hawaii	Tons	385	120	185	415	130	194
Plums, California	Tons	--	--	603	--	--	449
Prunes, California	Tons	--	873	873	--	6/	6/
Prunes and plums, other States	Tons	250	125	195	335	222	286
Strawberries	Pounds	0.542	0.287	0.463	0.551	0.274	0.473
Citrus: 4/							
Oranges	Box	10.32	7.10	7.98	17.21	7.70	9.15
Tangerines	Box	24.96	4.36	18.23	26.71	4.55	20.17
Grapefruit	Box	11.60	4.18	7.49	10.18	2.89	6.90
Lemons	Box	21.21	3.12	15.04	23.19	2.59	15.50
Limes	Box	21.20	2.30	13.87	28.20	3.14	19.21
Tangelos	Box	9.90	5.30	7.04	12.00	5.20	8.24
Templets	Box	19.60	6.30	7.62	13.00	5.53	7.89
Tree Nuts:							
Almonds, California 5/	Pounds	--	--	0.92	--	--	1.10
Hazelnuts, 2 States	Tons	--	--	784	--	--	742
Macadamia nuts, Hawaii	Pounds	--	--	0.82	--	--	72.00
Pistachios	Pounds	--	--	1.08	--	--	1.32
Pecans, all	Pounds	--	--	1.210	--	--	1.160
Improved	Pounds	--	--	1.280	--	--	1.280
Native and seedling	Pounds	--	--	0.902	--	--	0.863
Walnuts, 2 States	Tons	--	--	1,010	--	--	6/

-- = Not available.

1/ Preliminary. 2/ Fresh fruit prices are equivalent returns at packinghouse-door for Washington and Oregon, equivalent first delivery point returns for California, and prices as sold for other States. Processing fruit prices for all States are equivalent returns at processing plant door. 3/ Column headed 1990 refers to 1990/91 crop. 4/ Equivalent packinghouse-door returns column headed 1990 refers to 1989/90 crop. 5/ Shelled basis. 6/ Data available July 7, 1992. 7/ Data available August 18, 1991. 8/ Processed mostly canned, but includes small quantities of dried and other uses.

Source: National Agricultural Statistics Service, USDA.

Table 45--Value of fruit and tree nut crops, United States, 1989-91

Table 43—Value of fruit and tree nut crops, United States, 1989-91				Percent change to 1991	
Commodity	1989	1990	1991	from 1989	from 1990
	1,000 dollars			--Percent--	
<b>Citrus 1/:</b>					
Oranges	1,848,467	1,468,899	1,678,611	-9	14
Grapefruit	416,041	371,897	380,764	-8	2
Lemons	234,955	279,825	294,534	25	5
Limes, Florida	21,474	22,884	27,859	30	22
Tangelos, Florida	31,392	20,778	21,845	-30	5
Tangerines	83,075	72,088	77,753	-6	8
Temples, Florida	27,844	10,668	19,726	-29	85
<b>Noncitrus:</b>					
Apples	1,034,437	1,456,896	1,754,020	70	20
Apricots	40,222	40,937	37,356	-7	-9
Avocados	250,940	206,931	5/	--	--
Bananas, Hawaii	4,344	4,294	4,494	3	5
Cherries, sweet	136,125	118,319	137,659	1	16
Cherries, tart	35,348	36,685	5/	--	--
Cranberries	164,720	156,365	6/	--	--
Dates, California	22,880	20,880	26,880	17	29
Figs, California	18,341	17,273	5/	--	--
Grapes	1,862,888	1,670,468	1,614,935	-13	-3
Guavas	3,090	3,320	5/	--	--
Kiwifruit, California	14,800	14,110	5/	--	--
Nectarines, California	87,645	109,999	82,369	-6	-25
Olives, California	57,458	64,309	41,143	-28	-36
Papayas, Hawaii	14,380	14,805	16,465	14	11
Peaches	364,867	371,626	392,682	8	6
Pears	253,602	269,541	277,968	10	3
Pineapples, Hawaii	98,310	106,365	107,775	10	1
Pomegranates 2/	4,906	--	--		
Plums, California	96,146	134,412	97,894	2	-27
Prunes, dried, California	176,054	128,331	5/	--	--
Prunes and plums, ex. Calif.	9,079	8,444	7,084	-22	-16
Strawberries 3/	537,756	580,101	661,822	23	14
<b>Tree Nuts:</b>					
Almonds, California	480,930	591,560	499,400	4	-16
Hazelnuts	10,664	17,011	18,771	76	10
Macadamia, Hawaii	44,945	41,000	35,640	-21	-13
Pecans	179,040	247,590	284,375	59	15
Pistachios, California	63,570	129,600	101,640	60	-22
Walnuts, California	245,030	229,270	5/	--	--
Total 4/	8,975,765	9,037,481	9,574,134	7	6

-- = Not available.

1/ Equivalent packing house-door returns for all sales for citrus. Column headed 1989 refers to the 1988/89 crop.

2/ Discontinued after 1989.

3/ Includes processed and fresh market.

4/ Used 1990 price to compute value of 1991 production.

5/ Available July 7, 1992.

6/ Available August 18, 1992.

Source: National Agricultural Statistics Service, USDA.

Table 46--Value of fruit and tree nut crops, by State, 1990-91

State	Crop value		Proportion of U.S.	
	1990	1991	1990	1991
	1,000 dollars		Percent	
Alabama	7,416	17,248	0.1	0.2
Arizona	139,158	161,950	1.5	1.7
Arkansas	8,981	10,081	0.1	0.1
California	4,933,124	4,614,586	54.7	48.2
Colorado	11,561	11,632	0.1	0.1
Connecticut	10,413	9,580	0.1	0.1
Delaware	2,054	4,280	1/	1/
Florida	1,325,593	1,794,537	14.7	18.7
Georgia	116,322	128,994	1.3	1.3
Hawaii	170,189	168,099	1.9	1.8
Idaho	26,587	25,952	0.3	0.3
Illinois	10,256	19,015	0.1	0.2
Indiana	11,457	15,802	0.1	0.2
Iowa	1,922	2,278	1/	1/
Kansas	1,571	4,562	1/	0.1
Kentucky	1,640	4,831	1/	0.1
Louisiana	10,895	17,450	0.1	0.2
Maine	18,810	17,360	0.2	0.2
Maryland	5,830	14,866	0.1	0.2
Massachusetts	82,952	115,643	0.9	1.2
Michigan	146,413	169,744	1.6	1.8
Minnesota	7,186	9,944	0.1	0.1
Mississippi	2,840	5,100	1/	0.1
Missouri	7,718	12,284	0.1	0.1
Montana	250	0	1/	1/
New Hampshire	11,635	11,565	0.1	0.1
New Jersey	39,369	59,412	0.4	0.6
New Mexico	53,237	48,997	0.6	0.5
New York	193,845	211,678	2.1	2.2
North Carolina	33,283	40,270	0.4	0.4
Ohio	30,420	34,928	0.3	0.4
Oklahoma	7,361	22,782	0.1	0.2
Oregon	178,087	193,933	2.0	2.0
Pennsylvania	110,620	106,107	1.2	1.1
Rhode Island	1,545	1,355	1/	1/
South Carolina	28,109	49,501	0.3	0.5
Tennessee	1,853	3,879	1/	1/
Texas	98,593	68,272	1.1	0.7
Utah	10,843	16,658	0.1	0.2
Vermont	8,725	8,550	0.1	0.1
Virginia	21,151	52,718	0.2	0.6
Washington	1,054,329	1,183,091	11.7	12.4
West Virginia	15,223	21,660	0.2	0.2
Wisconsin	78,115	82,960	0.9	0.9
United States	9,037,481	9,574,134	100.0	100.0

1/ Less than 0.05 percent.

Source: National Agricultural Statistics Service, USDA.

Table 47--Fresh fruit: Retail price, marketing spreads, and grower-packer return per pound sold in the Northeast and North Central regions, indicated month, 1990 and 1991

Region, commodity, and month	Marketing spreads			Grower-packer return 1/ (f.o.b. shipping point price)	
	Retail price	Percent of		Percent of	
		Absolute	retail price	Absolute	retail price
	Cents		Percent	Cents	Percent
<b>NORTHEAST</b>					
<b>Apples, Washington Red</b>					
<b>Delicious:</b>					
December 1990	84.5	49.3	58	35.2	42
December 1991	93.0	53.4	57	39.6	43
November 1991	88.8	49.2	55	39.6	45
<b>Grapefruit, Florida white seedless:</b>					
December 1990	51.7	36.0	70	15.7	30
December 1991	47.7	32.7	68	15.0	32
November 1991	46.1	30.5	66	15.6	34
<b>Lemons, California:</b>					
December 1990	100.0	74.0	74	26.0	26
December 1991	118.1	82.7	70	35.4	30
November 1991	118.6	77.4	65	41.2	35
<b>Oranges, California Valencia:</b>					
October 1990	56.8	38.5	68	18.3	32
October 1991	94.7	47.8	50	46.9	50
September 1991	101.0	53.4	53	47.6	47
<b>NORTH CENTRAL</b>					
<b>Apples, Washington Red</b>					
<b>Delicious:</b>					
December 1990	79.8	44.6	56	35.2	44
December 1991	84.7	45.1	53	39.6	47
November 1991	82.5	42.9	52	39.6	48
<b>Grapefruit, Florida white seedless:</b>					
December 1990	58.4	42.7	73	15.7	27
December 1991	56.2	41.2	73	15.0	27
November 1991	58.2	42.6	73	15.6	27
<b>Lemons, California:</b>					
December 1990	101.7	75.7	74	26.0	26
December 1991	110.2	74.8	68	35.4	32
November 1991	114.7	73.5	64	41.2	36
<b>Oranges, California Valencia:</b>					
October 1990	53.3	35.0	66	18.3	34
October 1991	100.2	53.3	53	46.9	47
September 1991	106.0	58.4	55	47.6	45

1/Adjusted to account for loss incurred during marketing due to waste and spoilage.

Sources: Bureau of Labor Statistics, Department of Labor, and Economic Research Service, USDA.

Table 48--Fresh fruit: Representative truck rates for selected fruits, 1991 1/ 2/

Commodity and shipping points	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Dollars per package												
<b>Apples (tray packed ctn.)</b>												
<b>Washington, Central to:</b>												
Atlanta	2.93	2.90	2.90	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.98
Chicago	2.13	2.13	2.13	2.13	2.25	2.10	2.13	2.13	2.18	2.18	2.18	2.25
Dallas	2.38	2.38	2.38	2.30	2.30	2.30	2.25	2.25	2.30	2.30	2.30	2.40
Los Angeles	1.65	1.65	1.65	1.50	1.55	1.55	1.53	1.53	1.60	1.63	1.63	1.65
New York City	3.30	3.38	3.38	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.40
<b>New York, Eastern to:</b>												
Atlanta	1.25	1.25	1.25	1.25	--	--	--	--	--	--	--	--
New York City	0.58	0.58	0.58	0.58	--	--	--	--	--	0.80	0.80	0.80
<b>W. Virginia and Virginia to:</b>												
Atlanta	0.95	0.95	1.00	1.00	--	--	--	--	--	0.93	0.95	0.95
New York City	0.80	0.80	--	--	--	--	--	--	--	0.80	0.80	0.80
<b>Grapefruit (4/5 bu. ctn.)</b>												
<b>Florida to:</b>												
Atlanta	1.40	1.40	1.33	1.33	1.53	--	--	--	--	1.28	1.28	1.40
New York City	1.48	1.43	1.25	1.38	1.57	--	--	--	--	1.18	1.23	1.43
<b>Grapes (23 lb. lug)</b>												
<b>California, Kern District to:</b>												
Chicago	1.12	1.12	--	--	1.18	1.41	1.68	1.59	1.35	1.24	1.18	1.15
New York City	1.68	1.59	--	--	1.76	2.18	2.44	2.44	2.06	1.79	1.71	1.76
<b>Citrus (7/10 bu. ctn.)</b>												
<b>California, Southern to:</b>												
Atlanta	2.05	1.90	1.90	1.90	2.05	2.55	2.80	3.05	2.55	2.55	2.20	2.00
Chicago	2.00	1.90	1.90	1.85	2.00	2.40	2.40	2.55	2.10	1.90	1.90	2.10
Dallas	1.55	1.50	1.45	1.50	1.55	1.80	1.95	1.80	1.80	1.65	1.65	1.55
New York City	2.95	2.73	2.85	2.75	3.00	3.65	4.05	4.05	3.55	3.05	2.90	2.95
<b>Oranges (4/5 bu. ctn.)</b>												
<b>Florida to:</b>												
Chicago	1.48	1.40	1.33	1.38	1.56	--	--	--	--	1.28	1.28	1.40
New York City	1.48	1.43	1.40	1.38	1.61	--	--	--	--	1.18	1.23	1.43

--- = Not available.

1/ Reported from sample of shippers and/or truck brokers in specified areas for shipments during the first week of each month.

2/ AMS discontinued reporting rates for Washington apples sold in Denver, Florida grapefruit and Florida oranges sold in Atlanta, and California grapes sold in Atlanta and Denver.

Source: Fruit and Vegetable Truck Rate Report, AMS, USDA.

## Net Cash Income and Selected Characteristics of U.S. Farms Producing Fruits, Tree Nuts, and Berries

by

Doyle C. Johnson<sup>1</sup>

**Abstract:** Special data tabulations of the 1987 Census of Agriculture indicate that net cash income, specialization, and structure of U.S. fruit, tree nut, and berry farms vary widely by type, region, and size.

**Keywords:** Land, sales, production expenses, net cash income.

According to the 1987 U.S. Census of Agriculture, fruit and tree nuts were produced on 4.56 million acres of orchard land located on 120,434 farms. The fruit and nut industry, combined with berries, now represents a \$9-billion-plus industry at the producer level.

This report presents data on the number of farms, acreage, net cash income, farm production expenses, sales, and prices received by noncitrus fruit, citrus, tree nut, and berry farms in the United States. The data were obtained by USDA's Economic Research Service as special tabulations of the 1987 Census of Agriculture for 43 fruit, tree nut, and berry commodities. These data make it possible to examine more detailed information on the U.S. fruit, nut, and berry industry by commodity, geographic area, and farm size.

### Definitions

In this report, a measure of net cash income for fruit, nut, and berry farms is calculated by subtracting total farm production expenses from gross cash receipts. This is defined as the "net cash income from agricultural sales", or the operator's share of the value of agricultural products sold minus the operator's cash operating expenses and cash rent.

Gross receipts or "total market value of agricultural products sold" exclude Government payments, any other farm-related income such as custom work or agricultural services, and nonfarm income. Also, "total farm production expenses" exclude cash expenditures for capital improvements and production expenses paid by landlords. Therefore, this definition of net cash income would not necessarily provide accurate estimates of disposable income of farm operator households. However, the estimate provides a general measure of the financial viability of the farms producing specific fruit, tree nut, and berry crops.

"Total land in farms" consists of agricultural land used for cropland, grazing, or pasture, including woodlands and wastelands—except that which is held for nonagricultural purposes. Total land in farms is an operating-unit concept and includes land owned and operated, as well as land rented from others. "Land in fruits, nuts, and berries" as well as the number of acres shown for each specific crop includes bearing and nonbearing acreages. The farm numbers presented are "all farms", those with any sales of the specific commodity shown.

### Net Cash Income From Agricultural Sales

Table A-1 lists the 43 specific crops studied and presents information for each crop: 1) the total number of

farms reporting sales of each fruit, tree nut, and berry crops; 2) the total number of acres in farms, acreages for fruits, nuts, and berries, and the 43 crops specified; 3) the total value of sales of all agricultural products and sales of fruits, nuts, and berries; 4) the total amount of farm production expenses; and 5) net cash income per farm and total U.S. net cash income for each of the 43 fruit, nut, and berry crops.

Total agricultural sales were highest in 1987 for farms selling grapes<sup>2</sup> (\$2.47 billion), followed by oranges (\$2.22 billion), apples (\$2.10 billion), almonds (\$1.70 billion), grapefruit (\$1.31 billion), and peaches (\$1.45 billion). Subtracting farm production expenses from the total agricultural sales figures results in "net cash income" as follows: oranges (\$610 million), grapes (\$513 million), grapefruit (\$414 million), apples (\$386 million), and almonds (\$344 million).

The specialization of these farms in fruits, tree nuts, and berries varied considerably by crop. Farms reporting dates, papayas, kumquats, wild blueberries, and cranberries were more specialized, with over 90 percent of total farm sales from fruits, tree nuts, and berries. Farms reporting sales of bananas, almonds, filberts, macadamias, pecans, and most bushberry crops were more diversified, with less than 55 percent of total

<sup>1</sup>Agricultural Economist, Specialty Agriculture Branch, Commodity Economics Division, ERS.

<sup>2</sup>This excludes farms selling dried raisins.

farm sales accounted for by fruits, tree nuts, and berries. The degree of specialization among farms reporting most noncitrus fruit, tree nut, and berry crops was in the moderate range (65-70 percent of all sales from fruits, nuts, and berries). Specialization by farms reporting citrus crops was much higher, with at least 80 percent of their total sales accounted for by fruits, nuts, and berries.

In 1987, there were 36,718 U.S. farms that reported sales of apples. These farms reported a total of 923,884 acres of fruits, nuts, and berries (table A-1). Apples accounted for 65 percent of all acreage in fruits, nuts, and berries reported by these farms. Sales of fruits, nuts, and berries accounted for nearly two-thirds of the total sales of all agricultural products by the 36,718 farms reporting apple sales, but total acreage of fruits, nuts, and berries represented only 7.5 percent of the total land in farms. The farms reporting apple sales had \$1.71 billion of farm production expenses, leaving \$386 million in total net cash income from agricultural sales. Net cash income for these apple farms averaged \$10,525 per farm.

On average, the net cash income per farm for farms reporting a specific crop ranged from a negative \$1,279 for kumquat farms to \$188,590 for tangelo farms. In 1987 California date farms had the highest average net cash income among the noncitrus fruits and tangelo farms were the highest among the citrus fruits. Pistachios at \$69,582 were highest among the tree nut farms and cranberries at \$82,558 were the highest among the berry farms.

#### **Distribution of Net Cash Income by Farm Size**

The average net cash income from agricultural sales varies considerably

by size of farm where size is measured by the total market value of agricultural products sold (table A-2). The data show small-size farms (those under \$10,000 in sales) on average have negative net cash incomes, while net cash income is positive on larger farms. Frequently, small farms are operated by part-time producers who derive substantially larger proportions of their income from nonfarm sources than do producers on larger farms.

#### **Distribution of Net Cash Income by Region**

Regional differences in net cash income per farm varied by crop and were mixed among the noncitrus, citrus, nut, and berry crop categories (table A-3). Average net cash incomes were higher in the Northeast and North Central regions for apples, tart cherries, pears, and fresh plums and prunes than in the West or South regions. However, net cash incomes were highest in the West for some fruit crops such as apricots and sweet cherries, but highest for peaches in the South. Net cash income was generally higher for citrus farms in Florida than in California.

Pecans are the only tree nut crop that is grown in many States. Although pecan prices were low in 1987, it is evident from the data that pecan farms in the West, where only improved varieties of pecans are grown, fared better than pecan farms in the Southeast region, where a mix of improved and native pecans are grown. Net cash incomes for berry farms were generally highest in the Northeast region, except for strawberries which were highest in the West.

#### **Sales Concentration of Farms**

Data on the structure of fruit and nut farms and the amount of concentra-

tion for each crop by farm size, as measured by total agricultural sales, indicated that large farms were relatively fewer in number but accounted for a relatively large proportion of total acres, or sales, of each specific crop (table A-4). For example, 1.6 percent of the farms reporting apple sales were in the largest size category (\$500,000 or more in total agricultural sales), but these farms accounted for 23 percent of the total apple acres (sales). At the other extreme, the smallest farms (those with less than \$10,000 in agricultural sales) comprised 66 percent of the total farms reporting apple sales but accounted for only 14 percent of total apple acres (sales).

#### **Prices Received by Growers**

The relative net cash incomes shown in this report represent only 1 year (1987) and will change over time, especially as production and prices for the specific fruits vary from year-to-year. Prices received by producers in 1987 for apples, tart cherries, pears, fresh prunes and plums, lemons, and pecans were unusually low, while grower prices for all other fruit and nut crops were near normal (table A-5). That is, most fruit and nut prices in 1987 were near the average for all the years between 1983 and 1991. Cash receipts and, therefore, net cash incomes for farms selling any of the mentioned six crops may have been adversely affected by the low prices received for these six crops in 1987.

Table A-1--Farms producing fruits, nuts, berries: Net cash income from agricultural sales, 1987

Crop	Farms reporting sales	Land reported			Sales reported		Total farm production expenses	Net cash income	
		Total in farms	Fruits, nuts and berries	Crop shown	Total	Fruits, nuts and berries		Total	Per farm
	Number		--Acres--			--\$1,000--			Dollars
<b>NONCITRUS FRUITS:</b>									
Apples	36,718	12,334,589	923,844	601,020	2,098,079	1,364,205	1,711,611	386,468	10,525
Apricots	3,306	2,446,257	120,296	23,961	297,156	206,163	234,568	62,588	18,932
Avocados	6,902	499,315	156,918	87,700	310,427	247,880	264,780	45,647	6,614
Bananas, Hawaii	530	12,733	3,098	1,686	11,289	6,100	9,029	2,260	4,264
Cherries, sweet	7,171	1,005,180	286,992	60,462	637,120	453,210	498,000	139,120	19,400
Cherries, tart	4,198	768,333	210,768	68,391	271,257	182,716	227,865	43,392	10,336
Dates, California	183	29,912	24,183	6,717	70,883	66,496	44,166	26,717	145,993
Figs, California	336	54,418	36,046	16,439	48,829	38,473	41,595	7,234	21,528
Grapes, fresh	23,236	5,419,978	1,142,314	833,293	2,471,827	1,806,362	1,958,337	513,490	22,099
Guavas, Hawaii	141	4,142	1,461	1,081	3,132	2,480	3,313	(181)	(1,284)
Kiwifruit, California	989	109,866	52,600	8,908	127,478	112,852	87,088	40,390	40,840
Mangoes, Florida	271	12,030	7,500	3,054	15,707	12,788	13,490	2,217	8,182
Nectarines, California	1,129	238,620	151,019	29,163	391,941	342,838	313,951	77,990	69,079
Olives, California	1,363	227,420	108,692	33,265	224,795	191,843	207,027	17,768	13,036
Papayas, Hawaii	361	20,230	4,485	3,764	19,512	17,570	12,604	6,908	19,136
Peaches	20,995	8,883,902	697,562	239,698	1,445,460	955,786	1,189,122	256,338	12,209
Pears	10,092	1,547,973	322,774	84,247	758,304	590,722	589,782	168,522	16,699
Persimmons, California	735	88,239	42,710	2,357	121,614	105,942	105,677	15,937	21,683
Plums, prunes (fresh)	8,789	1,683,326	530,644	151,184	1,116,162	870,241	860,754	255,408	29,060
Pomegranates, California	330	83,559	29,592	3,450	75,260	62,945	62,036	13,224	40,071
<b>CITRUS FRUITS:</b>									
Grapefruit	4,998	2,258,890	679,040	189,417	1,305,756	1,118,058	891,433	414,323	82,898
Kumquats	62	2,881	1,716	99	3,047	2,761	2,339	79	1,279
Lemons	1,915	452,677	186,961	68,838	469,424	401,564	359,793	109,631	57,248
Limes	985	34,482	20,712	5,283	42,824	32,397	40,069	2,755	2,797
Oranges	14,312	3,728,483	1,120,135	791,249	2,223,508	1,801,939	1,613,412	610,096	42,628
Tangelos	757	1,006,060	246,779	13,004	495,251	436,643	352,488	142,763	188,590
Tangerines	853	462,829	177,315	11,005	397,865	345,077	283,291	114,574	134,319
<b>TREE NUTS:</b>									
Almonds, California	6,717	2,189,983	641,630	427,686	1,702,414	918,528	1,358,282	344,132	51,233
Hazelnuts, Oregon	1,212	127,822	35,298	28,346	63,763	27,702	47,073	16,690	13,771
Macadamias, Hawaii	1,036	149,950	25,298	23,232	97,313	48,227	76,899	20,414	19,705
Pecans	21,431	8,453,499	493,383	453,243	908,169	154,121	780,118	128,051	5,975
Pistachios, California	830	618,238	135,624	51,960	256,571	184,659	198,818	57,753	69,582
Walnuts, English, Calif.	7,446	1,490,112	426,017	210,204	876,789	572,199	657,115	219,674	29,502
<b>BERRIES:</b>									
Blackberries	2,086	306,734	30,271	6,679	115,997	65,138	98,665	17,332	8,309
Blueberries, tame	3,911	524,400	70,964	37,247	204,105	123,087	159,058	45,047	11,518
Blueberries, wild	501	120,505	22,665	21,970	16,794	15,346	12,034	4,760	9,500
Boysenberries	350	27,970	6,136	1,198	23,288	14,618	20,499	2,789	7,968
Cranberries	912	222,509	27,992	26,983	176,177	174,297	100,884	75,293	82,558
Currants	43	3,391	1,577	336	2,681	2,042	460	2,221	51,645
Loganberries, Oregon	122	11,775	1,498	570	8,515	2,754	6,561	1,954	16,013
Raspberries	4,297	495,921	61,744	15,484	259,370	147,902	212,262	47,108	10,963
Strawberries	9,398	1,397,892	125,292	53,086	1,021,546	553,986	789,170	232,376	24,726

Source: U.S. Dept. of Commerce, Census Bureau, U.S. Census of Agriculture, 1987.

Table A-2--Farms producing fruits, nuts, berries: Average net cash income, by size of farm, 1987 1/

Crop	All farms	\$500,000 or more	\$100,000- \$499,999	\$50,000- \$99,999	\$25,000- \$49,999	\$10,000- \$24,999	Less than \$10,000
--Dollars per farm--							
<b>NONCITRUS FRUITS:</b>							
Apples	10,525	266,623	53,405	17,765	9,477	2,974	(592)
Apricots	18,932	393,435	85,240	9,402	11,766	(1,169)	(1,470)
Avocados	6,614	332,441	51,838	8,974	3,768	(410)	(3,395)
Bananas, Hawaii	4,264	NP	107,133	30,444	10,776	4,326	(2,263)
Cherries, sweet	19,400	290,589	71,935	14,056	6,296	1,584	(1,445)
Cherries, tart	10,336	204,652	48,933	9,364	4,429	868	(1,022)
Dates, California	29,732	204,952	27,083	10,664	7,375	(565)	(2,053)
Figs, California	21,528	421,412	24,400	(17,250)	(10,697)	6,491	(1,306)
Grapes, fresh	22,099	356,694	67,985	19,555	10,180	2,484	(1,065)
Guavas, Hawaii	(1,284)	NP	(196,500)	36,667	8,333	4,818	(760)
Kiwifruit, California	40,840	457,211	131,367	26,929	10,816	3,851	(2,978)
Mangoes, Florida	15,193	250,714	167,795	14,714	(6,943)	(2,990)	(4,688)
Nectarines, California	69,079	309,364	91,143	13,567	2,345	2,385	1,619
Olives, California	13,036	412,623	(71,307)	16,320	6,878	(4,608)	542
Papayas, Hawaii	19,136	NP	305,563	25,000	13,630	6,020	(3,014)
Peaches	12,209	270,987	56,378	16,002	9,502	4,233	(681)
Pears	16,699	240,279	72,645	14,436	9,253	2,259	(916)
Persimmons, California	21,683	231,357	121,005	13,055	6,471	3,993	(3,459)
Plums and prunes (fresh)	29,060	351,427	80,579	18,363	7,716	2,413	(1,356)
Pomegranates, California	40,071	576,273	10,047	11,022	(713)	(1,875)	(1,525)
<b>CITRUS FRUITS:</b>							
Grapefruit	82,898	809,922	96,157	23,551	12,182	1,919	(2,328)
Kumquats	1,279	NP	(45,875)	NP	NP	7,210	(1,473)
Lemons	57,248	544,689	39,694	7,240	8,521	1,399	(1,477)
Limes	2,797	199,588	(6,908)	22,760	9,368	2,281	(3,489)
Oranges	42,628	711,872	55,901	22,109	10,724	2,459	(1,951)
Tangelos	188,590	945,007	85,898	22,927	15,107	(233)	(2,456)
Tangerines	134,319	899,073	22,189	12,776	16,450	(4,545)	(3,108)
<b>TREE NUTS:</b>							
Almonds, California	51,233	407,568	88,622	26,361	16,163	2,697	(2,151)
Hazelnuts, Oregon	13,771	326,889	66,680	27,095	15,500	5,908	(1,034)
Macadamias, Hawaii	19,705	1,961,667	59,154	14,385	15,074	5,253	(1,429)
Pecans	5,975	351,988	46,435	19,684	8,730	9,663	(356)
Pistachios, California	69,582	546,346	276,507	17,606	13,520	(1,526)	(7,089)
Walnuts, English, California	29,502	377,794	81,969	21,049	10,881	2,818	(1,707)
<b>BERRIES:</b>							
Blackberries	8,309	268,088	35,986	18,455	10,453	(638)	(1,093)
Blueberries, tame	11,518	375,275	51,779	17,278	10,043	5,423	(216)
Blueberries, wild	9,500	256,000	109,594	39,407	10,004	5,865	208
Boysenberries	7,968	47,000	29,298	19,020	6,740	4,880	(940)
Cranberries	82,558	564,000	82,355	32,064	10,058	6,302	1,949
Currants	7,459	NP	NP	19,625	4,400	3,289	(1,247)
Loganberries, Oregon	16,013	108,829	66,606	23,192	13,631	2,797	2,743
Raspberries	10,963	262,154	37,920	17,599	10,493	4,264	86
Strawberries	24,726	442,091	43,979	16,880	12,078	6,578	1,484

NP = not published to avoid disclosure. 1/ See definitions at end of text.

Source: U.S. Dept. of Commerce, Census Bureau, U.S. Census of Agriculture, 1987.

Table A-3--Farms producing fruits, nuts, berries: Average net cash income, by region, 1987

Crop	U.S.	North East	North Central	South	West
--Dollars per farm--					
<b>NONCITRUS FRUITS:</b>					
Apples	10,525	13,126	1/ 15,358	5,584	10,446
Apricots	18,932	15,958	1/ 36,485	NA	2/ 52,995
Avocados	6,614	NA	NA	3/ 30,012	2/ 11,113
Bananas, Hawaii	4,264	NA	NA	NA	NA
Cherries, sweet	19,400	11,408	15,823	35,566	2/ 55,199
Cherries, tart	10,336	13,466	14,548	NA	4/ (1,450)
Dates, California	145,993	NA	NA	NA	NA
Figs, California	21,528	NA	NA	NA	NA
Grapes, fresh	22,099	6,869	1/ 8,978	2,351	6,241
Guavas, Hawaii	(1,284)	NA	NA	NA	NA
Kiwifruit, California	40,840	NA	NA	NA	NA
Mangoes, Florida	8,182	NA	NA	NA	NA
Nectarines, California	69,079	NA	NA	NA	NA
Olives, California	13,036	NA	NA	NA	NA
Papayas, Hawaii	19,136	NA	NA	NA	NA
Peaches	12,209	20,476	14,657	5/ 22,333	5,339
Pears	16,699	18,999	12,425	NA	1,118
Persimmons, California	21,683	NA	NA	NA	NA
Plum and prunes (fresh)	29,060	18,527	20,568	NA	1,154
Pomegranates, California	40,071	NA	NA	NA	NA
<b>CITRUS FRUITS:</b>					
Grapefruit	82,898	NA	NA	6/ 179,025	2/ 108,629
Kumquats	1,279	NA	NA	NA	NA
Lemons	57,248	NA	NA	3/ 208,780	2/ 82,906
Limes	2,797	NA	NA	3/ 25,558	2/ 1,639
Oranges	46,628	NA	NA	3/ 94,338	2/ 50,118
Tangelos	188,590	NA	NA	3/ 570,226	2/ 147,637
Tangerines	134,319	NA	NA	3/ 475,377	2/ 153,041
<b>TREE NUTS:</b>					
Almonds, California	51,233	NA	NA	NA	NA
Hazelnuts, Oregon	13,771	NA	NA	NA	NA
Macadamias, Hawaii	19,705	NA	NA	NA	NA
Pecans	5,975	7/ 14,907	8/ 2,976	9/ 11,894	10/ 13,748
Pistachios, California	69,582	NA	NA	NA	NA
Walnuts, English, California	29,502	NA	NA	NA	NA
<b>BERRIES:</b>					
Blackberries	8,309	942	14,657	NA	4,483
Blueberries, tame	11,518	23,660	1/ 19,239	16,609	15,105
Blueberries, wild	9,500	NA	NA	NA	NA
Boysenberries	7,968	NA	NA	NA	11/ 13,103
Cranberries	82,558	12/ 99,840	NA	NA	13/ 24,013
Currants	51,645	NA	NA	NA	NA
Loganberries, Oregon	16,013	NA	NA	NA	NA
Raspberries	10,963	11,351	NA	8,283	26,560
Strawberries	24,726	18,381	1/ 17,849	12,497	145,472

NA = not applicable or not available.

1/ Michigan. 2/ California. 3/ Florida. 4/ Utah. 5/ South Carolina. 6/ Arizona. 7/ Alabama. 8/ Texas. 9/ Georgia. 10/ New Mexico. 11/ Oregon.

12/ Massachusetts. 13/ Washington.

Source: U.S. Dept. of Commerce, Census Bureau, U.S. Census of Agriculture, 1987.

Table A-4--Farms producing fruits, nuts, berries: Percent of farms and acres by size of farm, 1987

Crop	All farms	\$500,000 or more	\$100,000- \$499,999	\$50,000- \$99,999	\$25,000- \$49,999	\$10,000- \$24,999	Less than \$10,000
--Percent--							
<b>NONCITRUS FRUITS:</b>							
Apples							
Farms	36,718	1.6	8.6	6.5	6.8	10.3	66.2
Acres	601,020	23.1	35.7	12.5	7.7	6.7	14.3
Apricots							
Farms	3,306	2.8	9.0	6.5	6.5	9.1	66.1
Acres	23,961	24.9	33.3	14.1	7.5	6.6	13.7
Avocados							
Farms	6,902	1.6	5.6	4.8	7.4	12.7	67.9
Acres	87,700	16.9	23.1	10.9	12.1	11.7	25.2
Bananas, Hawaii							
Farms	530	0.4	2.8	3.4	9.2	16.8	67.4
Acres	1,686	NP	23.5	16.3	17.5	16.0	26.6
Cherries, sweet							
Farms	7,171	3.0	13.1	9.3	9.4	12.2	53.1
Acres	60,462	19.8	35.3 *	13.3	10.7	8.4	12.6
Cherries, tart							
Farms	4,198	1.6	12.5	9.3	9.5	12.2	54.8
Acres	68,391	10.1	38.6	14.8	13.3	11.3	11.9
Dates, California							
Farms	183	11.5	19.7	9.3	8.7	19.7	31.1
Acres	6,717	46.9	32.1	3.9	3.1	6.9	7.1
Figs, California							
Farms	336	5.1	7.4	3.9	5.1	8.0	70.5
Acres	16,439	55.2	24.1	5.3	4.5	3.9	7.0
Grapes, fresh weight							
Farms	23,236	3.3	11.3	8.7	10.2	13.3	53.1
Acres	833,293	38.6	31.0	11.3	7.7	5.6	5.8
Guavas, Hawaii							
Farms	141	0.7	1.4	2.1	6.4	15.6	73.8
Acres	1,081	NP	59.3	1.6	6.1	6.5	26.5
Kiwifruit, California							
Farms	989	3.8	15.6	8.9	10.5	16.2	45.0
Acres	8,908	23.4	28.2	9.1	9.9	10.1	19.3
Mangoes, Florida							
Farms	271	2.6	7.0	5.5	3.7	11.8	69.4
Acres	3,054	32.3	13.8	8.6	7.4	9.3	28.7
Nectarines, California							
Farms	1,129	12.4	30.5	15.7	11.1	8.8	21.6
Acres	29,163	53.7	30.7	6.6	3.2	1.8	4.0
Olives, California							
Farms	1,363	5.1	13.6	9.6	9.9	13.7	48.1
Acres	33,265	29.0	26.0	13.4	10.6	7.8	13.1
Papayas, Hawaii							
Farms	361	0.6	4.4	9.4	20.2	27.1	38.2
Acres	3,764	NP	43.7	14.2	20.4	13.9	7.9

continued--

Table A-4--Farms producing fruits, nuts, berries: Percent of farms and acres by size of farm, 1987--continued

Table A-4-1 Farms producing fruits, nuts, berries, 1 percent of farms and acreage by size of farm, 1997 - continued							
Crop	All farms	\$500,000 or more	\$100,000- \$499,999	\$50,000- \$99,999	\$25,000- \$49,999	\$10,000- \$24,999	Less than \$10,000
--Percent--							
NONCITRUS FRUITS-continued:							
Peaches							
Farms	20,995	2.1	8.8	5.7	6.2	9.4	67.8
Acres	239,698	33.0	30.5	8.1	6.3	5.8	16.2
Pears							
Farms	10,092	2.6	12.5	8.2	7.1	8.6	61.1
Acres	84,247	32.1	36.6	12.1	6.2	4.3	8.6
Persimmons, California							
Farms	735	3.8	10.9	5.7	7.9	12.4	59.3
Acres	2,357	16.7	17.5	7.8	8.8	11.1	38.1
Plums and prunes (fresh)							
Farms	8,789	4.4	14.8	8.9	8.5	9.6	53.8
Acres	151,184	42.2	32.5	9.6	5.6	4.6	5.5
Pomegranates, California							
Farms	330	6.7	14.5	10.9	7.6	10.6	49.7
Acres	3,450	31.8	23.2	15.0	7.9	8.4	13.7
CITRUS FRUITS:							
Grapefruit							
Farms	4,998	8.2	14.2	10.8	10.8	14.2	41.8
Acres	189,417	61.2	18.4	5.7	4.0	3.4	7.2
Kumquats							
Farms	62	1.6	9.7	3.2	3.2	17.7	64.5
Acres	99	NP	11.4	NP	NP	13.9	70.5
Lemons							
Farms	1,915	8.7	21.1	12.5	9.9	10.6	37.1
Acres	68,838	55.3	25.2	8.2	4.1	2.8	4.4
Limes							
Farms	985	1.7	5.3	4.9	7.2	13.1	67.8
Acres	5,283	45.4	22.0	10.0	7.0	10.5	5.0
Honey tangerines, Florida							
Farms	100	45.3	18.2	3.4	9.5	6.1	17.6
Acres	100	81.9	6.9	1.7	2.0	2.1	5.5
Oranges							
Farms	14,312	4.6	12.4	10.4	11.2	14.7	46.6
Acres	791,249	55.5	20.0	7.1	4.7	4.0	8.7
Tangelos							
Farms	757	18.2	15.9	10.7	8.1	8.5	38.7
Acres	13,004	64.5	18.7	5.1	2.8	2.8	6.1
Tangerines							
Farms	853	14.5	14.9	7.6	7.5	11.6	43.8
Acres	11,005	57.5	19.7	6.9	3.7	4.6	7.7

continued--

Table A-4--Farms producing fruits, nuts, berries: Percent of farms and acres by size of farm, 1987--continued

Crop	All farms	\$500,000 or more	\$100,000- \$499,999	\$50,000- \$99,999	\$25,000- \$49,999	\$10,000- \$24,999	Less than \$10,000
--Percent--							
<b>TREE NUTS:</b>							
Almonds, California							
Farms	6,717	7.2	19.1	12.3	13.7	14.9	32.8
Acres	427,686	45.2	31.0	8.4	5.8	4.5	5.1
Hazelnuts, Oregon							
Farms	1,212	1.5	8.4	6.4	8.3	15.1	60.2
Acres	28,346	5.4	33.4	17.9	12.1	13.0	18.1
Macadamias, Hawaii							
Farms	1,036	0.9	1.3	2.5	9.1	21.3	65.0
Acres	23,232	66.5	1.1	5.1	4.8	9.1	13.4
Pecans							
Farms	21,431	0.8	4.2	3.0	3.8	6.4	81.8
Acres	453,243	15.4	19.2	8.4	7.8	9.8	39.3
Pistachios, California							
Farms	830	6.3	13.0	8.7	11.1	12.0	48.9
Acres	51,960	57.7	16.0	6.4	5.5	4.2	10.2
Walnuts, English, California							
Farms	7,446	4.3	13.2	8.6	9.6	13.8	50.5
Acres	210,204	27.1	32.5	10.9	9.1	8.2	12.2
<b>BERRIES:</b>							
Blackberries							
Farms	2,086	1.6	7.6	6.2	8.1	13.5	63.0
Acres	6,679	23.2	22.4	11.2	13.1	11.8	18.2
Blueberries, tame							
Farms	3,911	1.3	7.7	6.7	8.3	14.7	61.3
Acres	37,247	13.2	36.0	12.9	10.1	11.5	16.4
Blueberries, wild							
Farms	501	0.8	3.0	4.4	10.0	22.6	59.3
Acres	21,970	42.2	13.5	6.2	10.7	13.8	13.6
Boysenberries							
Farms	350	2.6	12.3	10.0	11.7	18.3	45.1
Acres	1,198	15.6	36.4	11.2	10.6	14.5	11.6
Cranberries							
Farms	912	9.4	26.0	15.5	15.1	19.1	14.9
Acres	26,983	51.9	31.7	7.7	4.4	3.2	1.2
Currants							
Farms	43	4.7	9.3	11.6	11.6	18.6	44.2
Acres	336	NP	71.8	12.9	1.9	8.6	4.8
Loganberries, Oregon							
Farms	122	4.1	7.4	13.1	13.9	23.0	38.5
Acres	570	8.7	45.9	11.8	8.7	19.4	5.4
Raspberries							
Farms	4,297	1.8	8.4	7.6	9.4	15.0	57.8
Acres	15,484	18.6	33.1	13.4	10.8	10.3	13.9
Strawberries							
Farms	9,398	3.4	11.6	9.1	11.1	16.2	48.6
Acres	53,086	37.0	25.6	10.2	8.3	8.4	10.4

NP = not published to avoid disclosure.

Table A-5--Fruit, tree nut, and berries: Season-average prices received by growers, 1983-1991

Data Not Available for tree nuts, and selected season average prices received by growers, 1983-1991										Average
Crop	1983	1984	1985	1986	1987	1988	1989	1990	1991	1983-91
--Cents per pound--1/										
NONCITRUS FRUITS:										
Apples	10.5	11.1	11.7	13.4	8.6	12.7	10.4	15.1	17.9	12.4
Apricots	15.8	15.4	13.2	20.2	17.4	18.2	16.9	17.0	20.4	17.1
Avocados	19.0	27.9	47.7	17.2	51.5	57.0	90.0	66.5	NA	47.1
Bananas, Hawaii	31.2	30.0	30.3	30.0	29.7	33.0	36.5	38.0	42.0	33.4
Cherries, sweet	31.5	30.5	40.0	41.2	37.4	39.4	35.7	44.7	48.0	38.7
Cherries, tart	46.6	25.0	22.4	20.3	7.8	18.7	14.5	18.1	NA	21.7
Dates, California	31.9	39.6	43.0	41.4	43.6	44.8	52.0	43.5	56.0	44.0
Figs, California	10.3	14.4	15.3	14.2	16.6	17.6	19.1	17.8	NA	15.6
Grapes (fresh wt.) 2/	11.6	10.2	9.3	12.0	14.0	15.2	17.7	16.8	16.7	13.7
Guavas, Hawaii	8.8	9.8	10.2	10.5	12.0	13.4	15.0	15.0	NA	11.8
Kiwifruit, California	62.0	53.5	40.7	51.5	35.5	38.0	20.0	20.8	NA	40.2
Mangoes, Florida	21.8	22.7	22.7	20.0	21.8	27.3	23.6	NA	NA	22.9
Nectarines, California	15.0	15.8	16.4	22.0	17.2	19.7	19.9	23.7	20.1	18.9
Olives, California	26.0	27.5	28.0	29.4	30.4	25.9	23.4	24.5	31.7	27.4
Papayas, Hawaii	18.9	11.4	14.2	18.2	16.5	17.9	19.4	21.6	30.5	18.7
Peaches	14.4	14.4	12.6	14.4	14.0	13.8	16.4	17.4	15.8	14.8
Pears	8.5	11.5	13.5	13.4	9.9	13.7	13.9	14.0	15.3	12.6
Persimmons, California 3/	57.8	63.8	66.8	59.6	59.6	54.9	57.3	50.9	NA	58.8
Plums & prunes (fresh wt.) 4/	19.0	10.6	22.5	28.4	14.1	21.1	20.2	26.8	21.6	20.5
Prunes, dried, California	33.4	34.7	34.0	41.0	36.7	39.1	39.0	43.7	NA	37.7
Pomegranates, California 3/	26.4	21.3	29.1	31.1	34.9	34.0	30.3	37.1	NA	30.5
CITRUS FRUITS:										
Grapefruit	3.8	5.0	6.9	7.3	8.0	8.5	7.3	9.4	8.4	7.2
Lemons	5.8	7.4	8.7	15.7	8.4	12.9	15.5	19.8	20.4	12.7
Limes	14.8	13.9	13.8	14.4	15.5	20.5	19.5	15.9	21.8	16.7
Honey tangerines, Florida 5/	8.8	9.9	11.2	10.6	10.1	14.1	13.4	14.4	NA	13.2
Oranges	6.9	9.0	10.8	7.3	8.6	10.4	10.3	9.5	10.6	9.3
Tangelos, Florida	7.0	7.0	10.6	7.2	6.8	8.6	9.2	7.9	9.2	8.2
Tangerines	9.7	9.9	17.0	15.8	15.3	18.4	17.4	22.0	23.7	16.6
TREE NUTS (In-shell basis):										
Almonds, California	57.8	47.7	48.0	114.6	62.4	66.4	60.9	56.9	67.5	64.7
Hazelnuts, Oregon	27.9	31.0	34.0	36.3	47.9	42.7	41.0	39.2	37.1	37.5
Macadamias, Hawaii	65.7	69.2	72.5	80.0	84.0	90.0	89.0	82.0	72.0	78.3
Pecans	58.7	62.3	68.0	72.1	53.1	54.1	71.5	121.0	116.0	75.2
Pistachios, California	141.0	97.4	136.5	111.9	136.6	122.0	163.0	108.0	132.0	127.6
Walnuts, English, California	31.6	36.5	39.9	54.0	49.2	46.1	53.5	50.5	NA	45.2
BERRIES:										
Blackberries, Ore. & Wash.	29.3	49.8	57.8	60.9	28.3	30.9	37.7	39.9	NA	41.8
Blueberries, tame 6/	47.1	48.7	50.0	49.1	49.6	50.2	50.1	50.1	NA	49.4
Blueberries, wild (Maine)	37.0	25.0	23.0	31.0	45.0	45.0	50.0	38.0	NA	36.8
Boysenberries, Oregon	34.6	71.0	79.1	80.0	52.2	42.4	50.3	55.0	NA	58.1
Cranberries	44.8	46.7	46.3	44.7	44.5	45.7	44.0	46.1	NA	45.4
Loganberries, Oregon	26.0	40.2	49.6	75.3	35.6	35.0	44.5	38.0	NA	43.0
Raspberries, Ore. & Wash.	41.8	54.0	60.7	86.7	51.7	52.7	55.5	39.9	NA	55.4
Strawberries	45.6	41.7	44.3	49.4	49.4	46.2	47.1	46.3	47.3	46.4

NA = Not available.

1/ Marketing year prices for all sales were converted to cents per pound from various units the NASS publishes. 2/ All grapes except dried.

3/ County Agricultural Commissioner data. 4/ All except California dried prunes. 5/ Equivalent on-tree prices. 6/ Michigan, New Jersey, North Carolina, Oregon, and Washington.

Source: National Agricultural Statistics Service and Economic Research Service, USDA.

## USDA's Method of Estimating Fruit and Tree Nut Production

by

Dennis A. Shields<sup>1</sup>

**Abstract:** USDA's forecasts and estimates of fruit and tree nut production enable industry participants to make better decisions in operations, marketing, and policy. Nonprobability, probability, and objective yield surveys are used, depending on the commodity and available funding. The reliability of the forecasts vary by level of aggregation, commodity, and timing.

**Keywords:** Production forecasts, objective yield, probability surveys, nonprobability surveys.

Farmers, processors, marketers, and others working in the agricultural industry depend upon reliable crop production forecasts and estimates to make informed decisions in planning operations, marketing, and policy. USDA's National Agricultural Statistics Service (NASS) collects and communicates this information through nearly 400 periodic reports each year.<sup>2</sup> NASS accomplishes this task with a headquarters staff in Washington, D.C. and a network of 45 field offices serving the 50 States through cooperative agreements with State departments of agriculture or universities.

This paper examines how NASS develops its forecasts and estimates of fruit and tree nut production.<sup>3</sup> It also compares the initial production forecast and the end-of-season estimate for several fruits and tree nuts from 1975 to 1990.

### Brief History and Definition of Terms

USDA began estimating fruit and tree nut production in 1866 by repor-

ting "percent of full crop." Full crop was defined as expected production if there were no damage from bad weather, pests, or disease. In 1914, USDA replaced "percent of full crop" reporting with quantitative production estimates. Now NASS provides production forecasts, and/or production and use estimates for 19 noncitrus fruits, 7 citrus fruits and 6 tree nuts (see tables B-1 and B-2).

A production "estimate" is considered the final, end-of-season amount of production. A "forecast" is a prediction of the end-of-season "estimate" and incorporates information from grower-reported condition of the crop or from objective yield surveys. Along with production estimates, NASS reports the first "utilization", or how much of the crop was initially sold to fresh or processing markets.

Production forecasts are released during the growing season for noncitrus fruits and tree nuts in NASS's report *Crop Production*.<sup>4</sup> Final estimates and use for most noncitrus fruits and tree nuts are published annually in the January report *Noncitrus Fruits and Nuts--Preliminary*. The remaining estimates and use of noncitrus fruits and tree nuts, for which marketing is not complete by January, are published in July in the *Noncitrus Fruits and Nuts Summary*.

Citrus fruit production forecasts are published monthly in *Crop Production* during the growing and harvesting season. Forecasts begin in October and continue through July. An annual summary of production and use estimates is published in *Citrus Fruits* in September.

### How NASS Determines the Crop Size

The production forecasts and estimates are primarily determined with data collected by field offices in States that commercially produce fruit and tree nuts. The State estimates are then forwarded to NASS headquarters where they are reviewed and summarized into a U.S. total. Because of the sensitivity of the futures market to information regarding the supply of frozen concentrate orange juice, both Statewide and national summaries of orange production forecasts are prepared at the NASS headquarters for security purposes.

The end-of-season estimates of production and use are based on grower data plus data from State inspection certificate reports, Federal marketing order administrative committee reports, and industry sources, including grower organizations, cooperatives, and processors. Estimates of the amount of fresh fruit sold locally and consumed on farm are included in the final estimate.

<sup>1</sup>Agricultural Economist, Specialty Agriculture Branch, Commodity Economics Division, ERS.

<sup>2</sup>A complete list of NASS publications is in the 1992 Agricultural Board Catalogue (1). Numbers in parentheses refer to references listed at the end of the article.

<sup>3</sup>A more complete review of NASS' estimating methods, including fruit and tree nuts, can be found in (2). A revised version is expected in late 1992.

<sup>4</sup>All NASS publications appearing in the article are available with a paid subscription. Call 1-800-999-6779 for more information.

The survey methods vary by commodity and State, and can be categorized as: 1) nonprobability surveys, 2) probability sample surveys, and 3) objective yield surveys. These methods are listed in order of increasing reliability (and higher cost). NASS (more specifically, its field offices) and the cooperating State counterparts use all three methods, depending upon the commodity and availability of resources. Objective yield surveys are generally funded by the respective fruit or tree nut industry. Tables B-1 and B-2 indicate which type of survey is used to forecast production of the various fruits and tree nuts.

### Nonprobability Surveys

A nonprobability survey is based on an incomplete list of growers and there is no attempt to account for the incomplete survey base. Thus, estimates from nonprobability samples cannot be based on simple expansions of survey responses. Each NASS field office maintains a current (and confidential) list of known growers and their addresses from which to draw the sample. The sample is usually drawn to represent a cross-section of all growers in the State. In a nonprobability survey, a response from each grower in the sample is not required.

Growers respond to questionnaires that ask information on the condition of the crop as a percentage of a full crop and information on expected production versus actual production for the previous year. Telephone follow-up interviews help remove nonresponse bias in the results. This information is then associated with a quantitative amount based on the historical relationship for that particular fruit and State. Most fruit and tree nut forecasts are made with nonprobability surveys.

### Probability Sample Survey

The probability sample survey is designed on the premise that each

grower in the population has a known chance of being selected. Field offices usually distribute questionnaires in proportion to growers' farm size, allowing for a more representative sample of total production. Follow-up telephone and personal interviews of all nonrespondents ensure statistical completeness from all groups.

### Objective Yield Survey

The objective yield survey is considered the most reliable method of forecasting fruit and tree nut production because it is based on actual fruit counts and measurements rather than subjective observations. In addition, the benefits of an objective yield crop survey include: 1) more data on fruit sizes, 2) information about insect and disease damage to the crop, 3) crop maturity, droppage, and harvest progress, 4) yield variations between varieties and counties, and 5) other pertinent information on production, harvest, and marketing practices.

The following estimating components are directly expanded to reach a forecast for the region/State: 1) number of bearing trees or acres in the population, 2) average number of fruit per tree, 3) fruit size and weight at maturity, and 4) natural loss of fruit between time of fruit count and maturity.

The Florida citrus survey provides a specific example of an objective measurement survey. (3) Florida's citrus belt is divided into five nearly homogeneous areas and the bearing trees into 5 age groups. To ensure population representation, sample groves for surveying are selected from the tree inventory using probability sampling procedures. The sample groves are then mapped on enlarged aerial photos and indexed for reference. About 200 of the approximately 2,900 sample groves are replaced each year.

Before mid-July of each year, a crew randomly selects two trees from each grove and identifies the specific sam-

ple limb on each tree that will be used the next month for the fruit count. The sample limb represents approximately 10 percent of the tree's bearing surface and has a probability of selection proportional to limb cross-sectional area at each stage (or fork) of the selection, starting from the trunk and moving in successive stages up the tree.

In August and September, other survey crews count the fruit on the sample (terminal) limbs. The number of fruit on the sample limb is then multiplied by the reciprocal of the probability of selection, yielding an unbiased estimate of the total number of fruit on the tree.

As the season progresses, fruit counts are adjusted for natural loss of fruit and fruit sizing with a sequence of monthly surveys that use the limb-count trees, but not the same limbs. The fruit on these branches is re-counted each month. Fruit loss to harvest is then projected from historical data. Fruit-size measurement surveys are also conducted along with the fruit loss survey each month from July until harvest. Fruit circumference measurements are correlated with fruit weight and immature fruit measurements are projected to harvest size using historic growth curves.

Row count surveys are conducted monthly from December to May to determine the progress of the harvest for all citrus varieties. Fruit samples gathered during the row-count survey are analyzed for sugar content, the primary indication of citrus maturity. Several types of forecasting models are then used to expand the data by variety and tree age to arrive at a Statewide forecast.

### Tree and Vine Inventories

The objective yield survey requires commercial tree census data that specify location, density, and bearing-status in each State. States that are major fruit and tree nut producers periodically conduct their own or-

chard and vineyard inventory, including California's annual grape vine inventory and Florida's biennial citrus tree inventory.

In addition to the annual grape acreage survey in California, a portion of the counties are enumerated each year (annually rotated) for other fruit and tree nut acreage. The remainder of the counties use county agricultural commissioners' estimates to provide a complete acreage picture for fruits and nuts in California each year.

In general, most other States' orchard and vineyard inventories are conducted every 5 years. In a nonsurvey year, acreage is based on trends and county extension service data. Industry organizations also conduct tree surveys. For example, the California Cling Peach Advisory Board is currently conducting its annual tree count based on voluntary grower responses. State field offices utilize these data when making estimates.

#### Analysis of Forecast Accuracy

One way to evaluate the reliability of a production forecast is to calculate a statistic based on past performance called the "root mean square error" (RMSE). First, the difference between the forecast and the final estimate is expressed as a percent of the final estimate.<sup>5</sup> This percentage deviation is squared and then averaged over any specified period. The last step is to take the square root of this average. The RMSE can be used to make probability statements about the expected differences in the current forecast relative to the end-of-season estimate.

Table B-4 displays the RMSE for selected fruits and tree nuts for 1975 to 1990. The RMSE for the July 1 U.S. apple forecast is 5.39 percent.

<sup>5</sup>Table B-3 show first forecasts and end-of-season estimates for selected fruits and nuts. ERS.

This statistic means that there is a two out of three chance that the next July 1 forecast will not be above or below the final estimate by more than 5.39 percent. Also, chances are at least 9 out of 10 that the difference between the forecast and the final estimate will not exceed twice that amount, or 10.78 percent. Thus, based on prior performance, users of the crop forecasts have some idea of the forecasts' reliability. The years with freezes occurring after the first production forecast were excluded from the calculations (specifically, Florida citrus in 1976/77, 1980/81, 1981/82, 1983/84, 1984/85, and 1989/90).

Forecast reliability varies by level of aggregation, commodity, and month of the forecast. The State-level RMSE's are generally higher because the lower deviation base (the State-level final estimate) results in relatively higher percentage deviations.

The beginning-of-season Florida orange and grapefruit forecasts have a RMSE of 5.94 and 6.64 percent, respectively. Compared with RMSE's from most of the noncitrus and tree nut forecasts, the Florida citrus forecasts perform well considering the relatively long harvest season.

As expected, forecasts released later in the season had lower RMSE's, except for the walnut forecast. The results show that the September forecast (RMSE equals 6.25 percent) was marginally less reliable than the July forecast (RMSE equals 6.01 percent).

Although the July almond forecast is based on an objective yield survey, it is only slightly more reliable (RMSE equals 11.39 percent) than the nonprobability survey conducted the previous month (RMSE equals 14.35).

The RMSE for the July all-pear forecast for the United States is 7.35 percent. But a closer look at the deviations shows that U.S. pear production was underestimated 14 out of

16 years from 1975 to 1990. Final pear production was underestimated at least two-thirds of the time in each of the major components of U.S. pear forecast (California Bartlett, Oregon Bartlett, Oregon other pears, Washington other pears, and Washington Bartlett).

Understanding how NASS determines crop estimates and forecasts and the limitations of the production forecasts will increase the user's confidence in those numbers and in further analyses that depend on them.

#### References

1. "1992 Agricultural Statistics Board Catalog," USDA, NASS.
2. "Scope and Methods of the Statistical Reporting Service," USDA, SRS, Miscellaneous Publication No. 1308, September 1983.
3. "Forecasting Florida's Citrus Production," Florida Department of Agriculture and Consumer Services, 1991.

Table B-1--Schedule of USDA citrus fruit production forecasts and estimates

Commodity	Forecast Date											
	Sep. 1	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Sep. 23
Item												
Oranges, early, midseason, and Navel:												
Arizona		F			F			F				P,U
California	F <sup>1,2</sup>	F <sup>2</sup>		F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	P,U
Florida		F		F <sup>1</sup>	F <sup>1</sup>	F <sup>1</sup>	F	F	F	F	F	P,U
Texas		F		F	F	F	F	F	F			
Oranges, Valencia:												
Arizona		F			F			F			F	P,U
California		F <sup>2</sup>		F <sup>1,2</sup>	F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	F <sup>2</sup>	P,U
Florida		F <sup>1</sup>		F <sup>1</sup>	F <sup>1</sup>	F <sup>1</sup>	F <sup>1</sup>	F <sup>1</sup>	F	F	F	P,U
Texas		F		F	F	F	F	F	F	F		P,U
Grapefruit:												
Arizona		F			F			F			F	P,U
California												
Desert areas		F <sup>2</sup>			F <sup>2</sup>			F <sup>2</sup>				P,U
Other areas								F <sup>2</sup>			F <sup>2</sup>	P,U
Florida		F <sup>1</sup>		F <sup>1</sup>	F <sup>1</sup>	F <sup>1</sup>	F	F	F	F	F	P,U
Texas		F	F	F	F	F	F	F	F	F		P,U
Lemons:												
Arizona		F			F			F				P,U
California		F <sup>2</sup>			F <sup>2</sup>			F <sup>2</sup>			F <sup>2</sup>	P,U
Limes, Florida												P,U
Tangelos, Florida		F <sup>1</sup>		F <sup>1</sup>	F	F	F	F	F	F	F	P,U
Tangerines:												
Arizona		F			F			F				P,U
California		F <sup>2</sup>			F <sup>2</sup>			F <sup>2</sup>				P,U
Florida		F <sup>1</sup>		F <sup>1</sup>	F	F	F	F	F	F	F	P,U
Temple, Florida		F <sup>1</sup>		F <sup>1</sup>	F <sup>1</sup>	F <sup>1</sup>	F	F	F	F	F	P,U

<sup>1</sup>Based on objective yield survey.<sup>2</sup>Based on probability survey.

Key: F = Forecast of production

P = Estimate of production

U = Utilization estimate

Note: Forecasts not based on objective yield or probability survey are based on nonprobability surveys.

Table B-2--Schedule of USDA noncitrus fruit and tree nut production forecasts and estimates

Commodity	Forecast Date													
	Jan. 1 through Apr. 1	May 1	June 1	June 25	July 1	Aug. 1	Aug. 18	Sep. 1	Oct. 1	Nov. 1	Dec. 1	Jan. 17	May 1	July 7
Item														
Noncitrus fruit:														
Apples					F	F			F			P		P,U
Apricots			F		F							P,U		
Avocados (CA-FL-HI)	P													P
Bananas (HI)												P,U	P	P,U
Cherries, sweet														
Western states														
(CA only May 1)		F	F	F	F							P,U		
Great Lakes States				F								P,U		
Cherries, tart														
Western States			F		F							P,U		
Great Lakes States				F <sup>1</sup>								P,U		
Cranberries							F,P,U					P		
Dates (CA)												P		P,U
Figs (CA)												P		P,U
Guava												P,U		P,U
Grapes														
CA					F	F <sup>1</sup>		F	F			P,U		P,U
Other, excl. CA						F		F	F			P,U		P,U
Kiwifruit (CA)												P		P,U
Nectarines (CA)			F		F							P,U		
Olives (CA)						F <sup>2</sup>						P,U		
Papayas (HI)	F	F	F		F	F		F	F	F	F	P,U	P	P,U
Peaches			F		F	F						P,U		
Pears														
Barlett (WA, OR, CA)			F,P		F	F		F				P,U		
other (WA, OR, CA)					F	F		F				P		P,U
All (excl. WA, OR, CA)					F	F		F				P,U		
Pineapples (HI)												P,U		P,U
Plums (CA)			F		F							P,U		
Prunes (CA)			F,P		F <sup>2</sup>			F				P		P,U
Prunes & plums (excl. CA)						F		F	F			P,U		
Tree Nuts:														
Almonds (CA)		F	F		F <sup>1</sup>							P		P,U
Hazelnuts (OR, WA)								F <sup>1</sup>	F	F		P		P,U
Macadamias (HI)												P		P,U
Pecans (11 Southern States)								F	F		F	P		P,U
Pistachios (CA)								F <sup>1</sup>				P		P,U
Walnuts (CA)					F	F		F <sup>1</sup>				P		P,U

<sup>1</sup>Based on objective yield survey.<sup>2</sup>Based on probability survey.

Key: F = Forecast of production

P = Estimate of production (end-of-season)

U = Utilization estimate

Note: Forecasts not based on objective yield or probability survey are based on nonprobability surveys.

Table B-3--Beginning-of-season forecasts and final estimates for selected fruits and nuts, 1975-1990

Year	U.S. apples		Florida oranges		U.S. peaches		U.S. pears		U.S. almonds	
	July	Final	October	Final	June	Final	July	Final	June	Final
	Million pounds		Million boxes		Million pounds		Short tons		Thousand pounds	
1975	7,282.1	7,530.0	172.0	181.2	2,945.2	2,835.6	750,750	748,000	145,000	186,000
1976	6,113.2	6,472.2	209.0	186.8	3,194.0	3,018.3	769,800	839,100	210,000	284,000
1977	6,840.5	6,739.6	164.0	167.8	2,935.0	2,955.4	775,900	781,600	238,000	313,000
1978	7,148.0	7,596.9	167.0	164.0	2,730.6	2,652.7	655,200	723,250	210,000	181,000
1979	7,724.5	8,126.1	200.0	206.7	2,922.3	2,938.7	785,100	854,700	320,000	376,000
1980	8,220.5	8,818.4	203.0	172.4	2,880.2	3,068.6	869,800	897,350	300,000	322,000
1981	8,057.5	7,739.6	166.0	125.8	2,900.6	2,770.6	852,250	897,000	400,000	408,000
1982	8,563.2	8,122.0	143.0	139.6	2,123.4	2,285.6	739,350	802,000	360,000	347,000
1983	8,402.0	8,378.5	168.0	116.7	2,146.8	1,855.3	847,580	773,550	260,000	242,000
1984	8,199.5	8,324.0	119.0	103.9	2,527.0	2,660.3	687,000	708,250	450,000	590,000
1985	8,055.0	7,914.5	132.0	119.2	2,161.5	2,148.1	648,600	744,550	510,000	465,000
1986	7,687.0	7,859.0	129.0	119.7	2,346.9	2,306.6	714,450	767,150	250,000	250,000
1987	9,596.5	10,742.1	130.0	138.0	2,605.9	2,381.5	838,600	938,450	560,000	660,000
1988	8,066.1	9,128.0	152.0	146.6	2,631.5	2,614.1	801,100	860,850	580,000	590,000
1989	9,694.5	9,962.8	130.0	110.2	2,371.6	2,355.8	843,500	916,800	450,000	490,000
1990	9,841.0	9,696.8	165.0	151.5	2,125.8	2,233.2	938,000	963,800	670,000	660,000

Source: National Agricultural Statistics Service.

Table B-4--Root mean square errors for selected fruit and tree nut production forecast, 1975-1990

Commodity	Forecast region	Forecast month	RMSE
<b>Fruits:</b>			
Apples	U.S.	July	0.0539
	Washington	July	0.1441
Grapefruit 1/	Florida	October	0.0664
Grapes	California	July	0.0899
Oranges 1/	Florida	October	0.0594
Peaches	U.S.	June	0.0585
	U.S.	July	0.0535
Pears	U.S. all pears	July	0.0735
	California all pears	July	0.0976
	California Bartletts	July	0.1010
	Washington all pears	July	0.1124
	Washington Bartletts	July	0.1061
<b>Tree nuts:</b>			
Almonds	U.S.	June	0.1435
	U.S.	July	0.1139
Walnuts	U.S.	July	0.0601
	U.S.	September	0.0625

1/ RMSE for oranges and grapefruit excludes freeze years of 1976/77, 1980/81, 1981/82, 1983/84, 1984/85, and 1989/90.

## List of Tables

Table	Page
1. Consumer price indexes, United States, by month, 1989-91 .....	5
2. Citrus fruit: Production, 1989/90-1990/91 and indicated 1991/92 .....	6
3. Oranges: Utilized production, 1989/90-1990/91 and indicated 1991/92 .....	8
4. Oranges: U.S.-average equivalent on-tree price received by growers, 1989-92 .....	10
5. All oranges: State-average equivalent on-tree price received by growers, 1989-92 .....	10
6. Fresh-market oranges: State-average equivalent on-tree price received by growers, 1989-92 .....	11
7. Oranges used for frozen concentrate, Florida, 1984/85-1991/92 .....	12
8. Florida orange juice production, 1979/80-1991/92 .....	13
9. United States: Orange juice supply and utilization, 1985/86-1991/92 .....	13
10. Brazilian FCOJ production and utilization, 1986/87-1991/92 .....	13
11. Processing oranges: State-average equivalent on-tree price received by growers, 1989-92 .....	14
12. Other citrus: Utilized production, 1989/90-1990/91 and indicated 1991/92 .....	15
13. Tangerines: U.S.-average equivalent on-tree price received by growers, 1989-92 .....	16
14. Tangerines: State-average equivalent on-tree price received by growers, 1989-92 .....	16
15. Florida-average equivalent on-tree price received by growers, 1989-92 .....	17
16. Grapefruit: Utilized production, 1989/90-1990/91 and indicated 1991/92 .....	18
17. Fresh grapefruit shipments, Florida, 1986/87-1991/92 .....	20
18. Grapefruit used for frozen concentrate, Florida, 1984/85-1991/92 .....	20
19. Grapefruit: U.S.-average equivalent on-tree price received by growers, 1989-92 .....	20
20. Fresh grapefruit: State-average equivalent on-tree price received by growers, 1989-92 .....	21
21. Grapefruit: Florida-average equivalent on-tree price received by growers, 1989-92 .....	21
22. Lemons and limes: Utilized production, 1989/90-1990/91 and indicated 1991/92 .....	22
23. Lemons: U.S.-average equivalent on-tree price received by growers, 1989-92 .....	24
24. Lemons: State-average equivalent on-tree price received by growers, 1989-92 .....	24
25. Limes: Florida-average equivalent on-tree price received by growers, 1989-92 .....	24
26. Selected citrus prices, packinghouse-door returns, by month, 1989-92 .....	25
27. Utilized production and value of noncitrus fruit, United States, 1989-91 .....	26
28. U.S.-average monthly prices received by growers, 1989-92 .....	27
29. Total U.S. fresh apple holdings, March 1 .....	28
30. Apples, commercial crop: Total production and season-average prices received by growers, 1989, 1990, and indicated 1991 production .....	29
31. Pears: Utilized production, by State, and Pacific Coast variety composition, 1989-91 .....	30
32. Fresh pear storage holdings, month-end, 1988/89-1991/92 .....	31
33. Strawberry imports, United States, 1983-91 .....	32
34. Fruit for processing: Season-average price per short ton received by growers for selected noncitrus fruit, by type of use, and principal State, 1989-91 .....	33
35. Stocks of frozen fruit: End of January, 1987-92 .....	33
36. U.S. avocado production by State, 1980/81-1990/91 .....	34
37. Chilean fruit planted acres, 1980-92 .....	35
38. Fruit and tree nuts, bearing acreage, United States, 1980-91 .....	38
39. World tree nuts: Production, supply and distribution, by country, 1989/90-1991/92 .....	39
40. Peaches: Total production and season-average prices received by growers, 1989, 1990, and indicated 1991 production .....	40
41. Production and utilization of specified noncitrus fruits, United States, 1989-91 .....	41
42. Fruit and edible tree nuts: Utilized production, 1990 and 1991 .....	42
43. Fruit and edible tree nuts: Value of utilized production, 1990 and 1991 .....	43
44. Fruit and edible tree nuts: Season-average prices per unit received by growers, 1990 and 1991 .....	44
45. Value of fruit and tree nut crops, United States, 1989-91 .....	45
46. Value of fruit and tree nut crops, by State, 1990-91 .....	46
47. Fresh fruit: Retail price, marketing spreads, and grower-packer return per pound sold in the Northeast and North Central regions, indicated month, 1990 and 1991 .....	47
48. Fresh fruit: Representative truck rates for selected fruits, 1991 .....	48

# Get these timely reports from USDA's Economic Research Service

**These periodicals bring you the latest information on food, the farm, and rural America to help you keep your expertise up-to-date. Order these periodicals to get the latest facts, figures, trends, and issues from ERS.**

**Agricultural Outlook.** Presents USDA's farm income and food price forecasts. Emphasizes the short-term outlook, but also presents long-term analyses of issues ranging from international trade to U.S. land use and availability. Packed with more than 50 pages of charts, tables, and text that provide timely and useful information.

**Economic Indicators of the Farm Sector.** Updates economic trends in U.S. agriculture. Each issue explores a different aspect of income and expenses: national and State financial summaries, production and efficiency statistics, and costs of production for livestock and dairy and for major field crops.

**Farmline.** Concise, fact-filled articles focus on economic conditions facing farmers, how the agricultural environment is changing, and the causes and consequences of those changes for farm and rural people. Synthesizes farm economic information with charts and statistics.

**Food Review.** Offers the latest developments in food prices, product safety, nutrition programs, consumption patterns, and marketing.

**Foreign Agricultural Trade of the United States.** Every 2 months brings you quantity and value of U.S. farm exports and imports, plus price trends. Subscription includes two big 300-page supplements containing data for the previous fiscal or calendar year. A must for traders!

**Journal of Agricultural Economics Research.** Technical research in agricultural economics, including econometric models and statistics on methods employed and results of USDA economic research.

**Rural Conditions and Trends.** Tracks rural events: macroeconomic conditions, employment and underemployment, industrial structure, earnings and income, poverty and population.

**Rural Development Perspectives.** Crisp, nontechnical articles on the results of the most recent and the most relevant research on rural areas and small towns and what those results mean.

**World Agriculture.** Deals with worldwide developments in agricultural markets and trade. Updates current conditions and recent economic changes, and highlights significant trends—all with an emphasis on implications for global and U.S. agriculture.

☐ Check here for a free subscription to *Reports*, a quarterly catalog describing the latest ERS research reports. It's designed to help you keep up-to-date in all areas related to food, the farm, the rural economy, foreign trade, and the environment.

	1 year	2 years	3 years
Agricultural Outlook (11 per year)	_____ \$26	_____ \$51	_____ \$75
Economic Indicators of the Farm Sector (5 per year)	_____ \$14	_____ \$27	_____ \$39
Farmline (11 per year)	_____ \$12	_____ \$23	_____ \$33
Food Review (4 per year)	_____ \$11	_____ \$21	_____ \$30
Foreign Agricultural Trade of the United States (8 per year)	_____ \$25	_____ \$49	_____ \$72
Journal of Agricultural Economics Research (4 per year)	_____ \$8	_____ \$15	_____ \$21
Rural Conditions and Trends (4 per year)	_____ \$14	_____ \$27	_____ \$39
Rural Development Perspectives (3 per year)	_____ \$9	_____ \$17	_____ \$24
World Agriculture (4 per year)	_____ \$21	_____ \$41	_____ \$60

**Complete both sides of this order form.  
Single copies of all periodicals available for \$8.00 each.**

# Save by subscribing for up to 3 years!

**Situation and Outlook Reports.** These reports provide timely analyses and forecasts of all major agricultural commodities and related topics such as finance, farm inputs, land values, and world and regional developments.

	1 year	2 years	3 years
Agricultural Income and Finance (4 per year)	_____ \$12	_____ \$23	_____ \$33
Agricultural Resources (5 per year, each devoted to one topic, including <i>Inputs</i> , <i>Agricultural Land Values and Markets</i> , and <i>Cropland, Water, and Conservation</i> .)	_____ \$12	_____ \$23	_____ \$33
Aquaculture (2 per year)	_____ \$12	_____ \$23	_____ \$33
Cotton and Wool (4 per year)	_____ \$12	_____ \$23	_____ \$33
Dairy (5 per year)	_____ \$12	_____ \$23	_____ \$33
Feed (4 per year)	_____ \$12	_____ \$23	_____ \$33
Fruit and Tree Nuts (4 per year)	_____ \$12	_____ \$23	_____ \$33
Livestock and Poultry (6 per year)	_____ \$17	_____ \$33	_____ \$48
Livestock and Poultry Update (monthly)	_____ \$15	_____ \$29	_____ \$42
Oil Crops (4 per year)	_____ \$12	_____ \$23	_____ \$33
Outlook for U.S. Agricultural Exports (4 per year)	_____ \$12	_____ \$23	_____ \$33
Rice (3 per year)	_____ \$12	_____ \$23	_____ \$33
Sugar and Sweetener (4 per year)	_____ \$12	_____ \$23	_____ \$33
Tobacco (4 per year)	_____ \$12	_____ \$23	_____ \$33
U.S. Agricultural Trade Update (monthly)	_____ \$15	_____ \$29	_____ \$42
Vegetables and Specialties (3 per year)	_____ \$12	_____ \$23	_____ \$33
Wheat (4 per year)	_____ \$12	_____ \$23	_____ \$33
Agriculture and Trade Reports (5 per year)	_____ \$12	_____ \$23	_____ \$33

Supplement your subscription to *World Agriculture* by subscribing to these five annuals: *Western Europe*, *Pacific Rim*, *Developing Economies*, *China*, and *USSR*.

**For fastest service, call our order desk toll free: 1-800-999-6779 (8:30-5:00 ET in the U.S. and Canada; other areas please call 301-725-7937)**

- Use purchase orders, checks drawn on U.S. banks, cashier's checks, or international money orders.

- **Make payable to ERS-NASS.**

- Add 25 percent for shipments to foreign addresses (includes Canada).

Name \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Daytime phone (\_\_\_\_\_) \_\_\_\_\_

☐ Bill me. ☐ Enclosed is \$\_\_\_\_\_.

**Credit Card Orders:**

☐ MasterCard ☐ VISA Total charges \$\_\_\_\_\_.

Month / Year

Credit card number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Expiration date:

--	--

**Complete both sides of this order form and mail to:**

**ERS-NASS  
P.O. Box 1608  
Rockville, MD 20849-1608**

---

## Keep Up-To-Date on Aquaculture Developments!

Subscribe to the *Aquaculture Situation and Outlook* report and receive timely analysis and forecasts directly from the Economic Research Service. Get the latest estimates on U.S. production and sales of species from alligators to tilapia. Also special articles dealing with topics of special interest to the aquaculture industry. Subscription includes two issues. Save money by subscribing for more than 1 year.

### Aquaculture Situation and Outlook Subscription

	1 Year	2 Years	3
Years			
Domestic	_____ \$12.00	_____ \$23.00	_____ \$33.00

**For *fastest* service, call  
our order desk toll free,  
1-800-999-6779  
(8:30-5:00 ET in U.S. and Canada; other  
areas please call 301-725-7937)**

☐ Bill me. ☐ Enclosed is \$\_\_\_\_\_.

Use purchase orders, checks drawn on U.S. banks,  
cashier's checks, or international money orders.

***Make payable to ERS-NASS.***

#### Credit Card Orders:

☐ MasterCard ☐ VISA Total charges \$\_\_\_\_\_.

Credit card number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Expiration date:

--	--

Month/Year

Name \_\_\_\_\_

#### Mail to:

Address \_\_\_\_\_

ERS-NASS

P.O. Box 1608

City, State, Zip \_\_\_\_\_

Rockville, MD

Daytime phone (\_\_\_\_\_) \_\_\_\_\_

20849-1608

---

United States  
Department of Agriculture  
1301 New York Avenue, NW  
Washington, DC 20005-4789

**OFFICIAL BUSINESS**

Penalty for Private Use, \$300

FIRST CLASS  
POSTAGE & FEES PAID  
USDA  
PERMIT NO. G-145

**MOVING?** To change your address, send this sheet with label intact, showing new address to: EMS Information, Rm 228, 1301 New York Ave., NW, Washington, DC 20005-4789

☒ **Want to Subscribe?** ☒ **Time to Renew?**

Subscribe to *Fruit and Tree Nuts Situation and Outlook* today! If you already subscribe to this timely periodical, note that your subscription expires in the month and year shown on the top line of your mailing label. **The expiration date will appear in one of two formats:** FEB93 (for February 1993) or 930430 (for April 30, 1993). Disregard this notice if no renewal date appears. **Call toll free, 1-800-999-6779**, and tell us whether you want to subscribe or renew, or return this form to: **ERS-NASS, P.O. Box 1608, Rockville, MD 20849-1608.**

**Fruit and Tree Nuts Situation and Outlook**

- ☐ Yes! I want to **start** my subscription.
- ☐ Yes! I want to **renew** my subscription.

	1 Year	2 Years	3 Years
Domestic	<input type="checkbox"/> \$12.00	<input type="checkbox"/> \$23.00	<input type="checkbox"/> \$33.00
Foreign	<input type="checkbox"/> \$15.00	<input type="checkbox"/> \$28.75	<input type="checkbox"/> \$41.25

**New subscribers:**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Daytime phone: (\_\_\_\_\_) \_\_\_\_\_

**Payment method:**

- ☐ Bill me.
- ☐ Enclosed is \$\_\_\_\_\_.

Use purchase orders, checks drawn on U.S. banks (and in U.S. funds), cashier's checks, or international money orders. **Make payable to ERS-NASS.** Please do not send cash.

**Renewals:**

ATTACH MAILING LABEL HERE

**Credit card orders:** ☐ MasterCard ☐ Visa Total charges \$\_\_\_\_\_

Credit card  
number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Card expiration  
date:

--	--

Month/Year

**For fastest service, call our toll-free order desk 1-800-999-6779,  
in the U.S. and Canada; other areas please call 301-725-7937**